FM 71-1

TANK AND MECHANIZED INFANTRY COMPANY TEAM

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TANK AND MECHANIZED INFANTRY COMPANY TEAM

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PREFACE

FM 71-1 describes how the tank and mechanized infantry company team fights on the AirLand battlefield. Its contents are the result of careful and intensive coordination among the Armor School, the Infantry School, and the Combined Arms Center. It is for the company team commander and his subordinate officers and noncommissioned officers.

This manual represents the most current thinking on how to employ the company team on the battlefield in relation to its higher headquarters, its subordinate units, and the threat array. It focuses on the team's organizational structure, command and control, tactical employment, combat support, and combat service support. It outlines synchronization of the assets that could be attached or assigned to the company.

In discussing these functions, however, this manual does not prescribe exact plans and procedures for accomplishing them. It is not a substitute for unit SOPs; rather, it provides a basis for their development. It is not a stand-alone document and does not repeat doctrine published elsewhere. A basic understanding of FM 100-5, FM 71-2, FM 7-71, and FM 17-15 is needed to effectively use this manual.

The proponent for this publication is HQ TRADOC. Submit changes for improving the manual on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commandant, USAARMS, ATTN: ATSB-CS-CAD, Fort Knox, Kentucky 40121-5211.

The provisions of this publication are the subject of the following international agreements:

QSTAG 506	Operations Orders, Warning Orders, and Administrative Orders
QSTAG 567	Command and Control of Antiarmor Weapons
STANAG 2014	Operation Orders, Warning orders, and Administrative/Logistics Orders
STANAG 2029	Method of Describing Ground Locations, Areas, and Boundaries
STANAG 2041	Operation Orders, Tables and Graphs for Road Movement
STANAG 2044	Procedures for Dealing With Prisoners of War (PW)
STANAG 2047	Emergency Alarms of Hazard or Attack (NBC and Air Attack Only)
STANAG 2082	Relief of Combat Troops
STANAG 2083	Commanders' Guide on Nuclear Radiation Exposure of Groups
STANAG 2099	Fire Coordination in Support of Land Forces
STANAG 2129	Recognition and Identification of Forces on the Battlefield
STANAG 2147	Target Numbering System (Non-nuclear)
STANAG 2868	Land Force Tactical Doctrine—ATP-35(A)
STANAG 2963	Coordination of Field Artillery Delivered Scatterable Mines

The words battalion and company show the size of the command and control headquarters for those units. Use them interchangeably with the words task force and team.

Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

This chapter implements STANAG 2868.

CHAPTER 1

INTRODUCTION

The company team combines mechanized infantry and tank platoons under the command of a tank or mechanized infantry company headquarters. The company team consists of at least two platoons but may control as many as five.

The battalion task force commander decides to form company teams based on his estimate of the situation. Company commanders should be prepared to fight pure or task organized to accomplish the mission. The basic concepts outlined in this manual apply to both pure companies and company teams. Specific examples show the capabilities and uses of different company team mixes.

Section I. AIRLAND BATTLE

A company team commander must apply the imperatives of modern combat and understand the dynamics of combat power to achieve the *initiative, agility, depth*, and *synchronization* that characterize the AirLand battle.

Initiative means to set or change the terms of the battle through actions. There are several steps to take to achieve the initiative:

- Aggressively act on the higher commander's intent.
- Take calculated risks while operating under pressure.
- Maintain control of the situation; you can't do it all.
- Make sure the executive officer (XO), platoon leaders, company fire support officer (FSO), and first sergeant understand the battalion commander's intent and concept as well as your own.
- Tell them what to do, why it needs to be done, and *how much* freedom of action they have in which to do it. Given proper guidance, the soldiers will use their instinctive ingenuity and will to win to get the job done.

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Agility is the ability of friendly forces to act faster than the enemy. Gain agility not only through physical speed, but also by anticipating enemy actions well enough in advance to act faster than the enemy. The M1 tank and the M2 Bradley fighting vehicle (BFV) give the company team a great advantage in moving fast before the onset of the battle. Do not be deceived! At company team level, agility depends on the ability to get into the fight *first with the most*. Simply moving fast without direction, cover, or security is a recipe for disaster. Use speed to the best advantage, considering the constraints of the terrain and the enemy situation. Use dash speed in the open. Stop only when cover and concealment are available. Use speed to achieve *depth* and *synchronization*.

Depth is a measure of time, space, and resources available to conduct operations. Make the best use of each of these dimensions of depth. Then the best trade-off between mass and economy of force will be achieved. This enables the company team to strike the depth of the enemy's formations and positions by flanking fires and indirect approaches. This is critical before the battle starts. The best way to gain time and space in a firefight is to destroy the enemy. Proper use of resources requires the combination of the elements of combat power, maneuver, firepower, protection, and leadership to gain an overwhelming advantage over the enemy at the decisive place and time.

Synchronization arranges actions in time and space to produce maximum relative combat power at the decisive point. This requires careful timing; timing requires teamwork. Teamwork is particularly important at company level. Establish SOPs and train until *everyone* knows and understands them. Rehearse drills and other tactical techniques until they can be completed precisely and automatically. Train the procedures for calling, adjusting, and shifting fires down to the squad and crew level. The same applies to air defense and NBC reaction drills.

Section II. ELEMENTS OF COMBAT POWER

Combat power is the ability to fight. It measures the effect created by combining *maneuver*, *firepower*, *protection*, and *leadership*. Generate superior combat power by combining these elements skillfully in a sound plan executed flexibly, violently, and aggressively.

Maneuver is the movement of forces supported by fire to achieve a position of advantage from which to destroy or threaten destruction of the enemy. As Bedford Forrest said, "Get there first with the most." Tactical maneuver gains and sustains the initiative, exploits success, preserves freedom of action, and reduces the vulnerability of friendly forces. Successful tactical maneuver requires fixing the enemy with fire to stop or slow his maneuver and suppress his fires. The company team maneuver should be conducted along an indirect approach to concentrate overwhelming firepower against the enemy's weak point. This weak point is normally where the enemy least expects maneuver. Although it is often the enemy's flank or rear, dead space to the enemy's front can be used to close rapidly on the enemy and seize an advantage.

Firepower provides the destructive force needed to defeat the enemy's ability and will to fight. As Heinz Guderian said "Smash them, don't harass them." Firepower is an essential base for maneuver. Firepower eases maneuver by suppressing the enemy's fires, disrupting his movement, neutralizing his units, and destroying his combat power.

To achieve the desired effects against point and area targets, effectively control and direct tactical firepower. (Chapter 2 provides specific information on the control of fires.)

Protection is the conservation of a force's fighting potential so it can be applied at the decisive place and time. Protection includes the actions taken to counter the enemy's firepower and maneuver. These actions include security measures; dispersion; use of cover, concealment, and camouflage; NBC protective measures; rapid movement; and suppressive fires. A company team commander must also preserve combat power by keeping the soldiers healthy; maintaining their fighting morale; and guarding their equipment and supplies against loss, damage, or disrepair.

Leadership is essential to the successful use of combat power. Without leadership, it is impossible to use maneuver, firepower, or protection to obtain results. A company team commander must motivate the soldiers and give direction and purpose to their efforts. Small-unit leaders give the essential help needed to accomplish this task. Prepare the soldiers physically and psychologically for the next battle. During the fight, actions must match words. Maintain tactical control and encourage the soldiers to fight by leading from the front, setting the example, and staying cool and confident when it gets tough. When the soldiers hesitate to fire, *you fire*. When the soldiers hesitate to break cover and move, *you go first*. Remember, the soldiers are a team, and it is your job to make sure they function as a unit.

Section III. IMPERATIVES OF MODERN COMBAT

To fight, survive, and win on the modern battlefield, apply the following AirLand battle imperatives based on the nine principles of war outlined in FM 100-5 Appendix A.

- Ensure unity of effort.
- Anticipate events on the battlefield.
- Concentrate combat power against enemy vulnerabilities.
- Designate, sustain, and shift the main effort.
- Press the fight.
- Move fast, strike hard, and finish rapidly.
- Use terrain, weather, deception, and operations security (OPSEC).
- Conserve strength for decisive action.
- Combine arms and sister services to complement and reinforce each other.
- Understand the effects of battle on soldiers, units, and leaders.

Ensure unity of effort within the company team and with adjacent and supporting units. To maintain unity of effort, the company team mission and the battalion task force commander's concept of the operation must be fully understood. Understanding the brigade commander's intent will enable you to anticipate the battalion task force commander's requirements as the situation changes.

Coordinate and cooperate with the adjacent units when interaction is necessary. Interaction is frequently necessary when supporting engineers, air defense units, and combat electronic warfare intelligence (CEWI) units are operating in the company team area of operations. Such missions as battalion task force reserve, passage of lines (conduct or assist), or relief in place require extensive coordination and cooperation between company-size units. Almost every mission requires some coordination between adjacent units.

Anticipate events on the battlefield. A company team commander must not only know what is happening, but must also be able to predict what is likely to happen next. Keep abreast of the situation using information provided by subordinate, adjacent, and higher unit leaders. A wide range of intelligence-gathering assets is at your disposal. Use thermal sights, observation posts, and patrols aggressively to gather information

With this information, estimate the situation (see Chapter 2 for more about estimating the situation). Use the estimate to visualize what is likely to happen on the battlefield and to determine which course of action will allow accomplishment of the mission. Never let an estimate of the situation become set in concrete. Maintain flexibility by constantly updating the estimate and by mentally challenging the conclusions. This allows quick reactions to changing situations.

Concentrate combat power against enemy vulnerabilities. When analyzing relative combat power, consider the capabilities two levels down. This amounts to number of tanks; BFVs; tube-launched, optically tracked, wire-guided (TOW) missiles; crew-served weapons; and full-strength rifle teams. Compare the size of the force and its capabilities against the enemy force to assess the company team's ability to generate superior combat power against the enemy.

Always strive to use the indirect approach to strike the enemy where he is weak. This is not always the flank of the enemy's position or formations! The enemy also strives to maintain mutual support. Strip away its mutual support by isolating its units, then crushing it one piece at a time with overwhelming force. Another approach is to concentrate against the enemy's most critical weapon systems when and where they are at a disadvantage. Killing tanks and antitank guided missiles (ATGM) at long range will decrease the enemy's momentum as it increases the momentum of the company team. Destroying enemy infantry will deny it the ability to seize and hold ground.

Designate, sustain, and shift the main effort. The battalion task force commander will designate a main effort as part of his concept of the operation. The company team may form the main effort in the battalion task force scheme of maneuver. It will then receive additional support to enable it to accomplish the mission. If *supporting* the main effort, it is critical to maneuver where the supporting tasks can be accomplished.

While assigned a reserve mission or a mission supporting the main effort, the company team may become the battalion task force main effort. Be prepared to accept additional platoons or increased combat support (CS) and combat service support (CSS) if the main effort is shifted to the company team.

While conducting an estimate of the situation, decide where, when, and how to concentrate combat power in time and space. Identify the critical tasks and plan to accomplish them *one phase at a time.* In some cases, it will prove useful to give one platoon or element the responsibility for accomplishing one or more critical tasks. Designate this platoon or maneuver element as the main effort. Other platoons support this main effort by overwatch and supporting fire. Priorities of CS and CSS are given to the platoon or element designated as the main effort.

Shift the main effort when a new phase occurs and a different platoon or element is assigned the critical task necessary to accomplish the operation. Sometimes the entire company team forms the main effort to accomplish the critical task. When this occurs, prioritize the use of CS and CSS to the platoon or element best able to use this support. For example, assign priority of fire to the platoon best able to observe and adjust indirect fires.

Press the fight. Once contact is made with the enemy, do not let go until the engagement is won. Throw everything into the fight to *win. Reinforce success,* not failure. Exploit small gains to achieve decisive results.

Move fast, strike hard, and finish rapidly. The company team has enormous potential in speed and firepower. A company team commander must turn this potential into real momentum. When in the open, the soldiers must move as fast as possible toward a covered, concealed position. When concealment is reached, the next open area should be carefully reconnoitered. When possible, synchronize the opening of fire to gain the maximum destruction and shock effect. The idea is to win the battle with overwhelming fire in a few seconds. Concentrate the fires at a well-defined point of main effort to gain maximum shock effect. This will help minimize losses. Close with and assault the enemy to finish it off once fire superiority is achieved (when this supports the battalion task force commander's intent). Consolidate gains rapidly and prepare to fight the next battle.

Use terrain, weather, deception, and OPSEC. Proper use of terrain, weather, deception, and OPSEC is crucial to the company team's survival on the battlefield. Use camouflage, counterreconnaissance measures, noise and light discipline, and proper radio procedures to supplement cover and concealment to deny the enemy the ability to find the company team and direct fire against it. Weather can be a decisive factor which helps or hinders the company team's plans. All plans must consider visibility; ground conditions; the effects of heat, cold, and humidity; and precipitation.

Make full use of the target acquisition systems to detect the enemy under all visibility conditions. Using thermal sights during the day as well as night decreases the obscuration caused by smoke, dust, and other limited visibility conditions. Expect such conditions to be the norm on today's battlefield.

Master the art of clever use of terrain. Many positions with good fields of fire and cover and concealment lack access to favorable avenues of approach to support rapid maneuver. Remember, high ground is not always the best terrain available, especially if it lacks cover and concealment. Likewise, beware of positions that lack favorable fields of fire relative to the enemy. Ideally, every fighting position should offer cover and concealment with good fields of fire and access routes. In practice, trade-off of one or more of these characteristics may be needed to accomplish the mission.

Select positions that allow engagement of the enemy from the flanks and rear. Armored vehicles are less protected on the flanks and rear and thus more easily destroyed. Enemy vehicle commanders will be confused, disoriented, and slower to react to flank engagements. After identifying your position, the enemy must reorient away from the primary direction of travel to engage in an area it has not prepared and probably has not targeted with artillery.

Conserve strength for decisive action. To achieve decisive results, retain freedom of action. Until the decisive point in time and space is reached, carefully conserve the company team strength. At company team level, there are limited time, space, and resources to generate depth. Therefore, finding the enemy before it finds you is vital. When moving, the soldiers must constantly observe key terrain and likely enemy avenues of approach. Sectors of observation must be clearly defined and strictly observed.

Once in contact, develop the situation rapidly and determine if the main effort needs to be shifted. Form reserves from the battle with elements that gain local success and less committed platoons that can disengage quickly and move where they are needed.

Combine arms to complement and reinforce each other. Form combined arms teams when the tactical situation warrants. The integration of tanks and infantry is routine at company level. Tanks and infantry in platoons, squad sections, and individual hunter-killer teams may be integrated under some circumstances.

Combined arms assets are complementary, reducing friendly vulnerability while making the enemy more vulnerable. As the enemy avoids the effects of one type of weapon, he exposes himself to attack by another.

Engage a mounted enemy force with tank main-gun, TOW missile, and 25-mm fires, supported by artillery-delivered Copperhead and dual-purpose improved conventional munition (DPICM). Tanks have a rapid rate of fire, and are best used against massed armor formations. BFVs can strip the motorized rifle troops away from the tanks by destroying their infantry fighting vehicles (IFV) with 25-mm fire at medium to long ranges. TOW missiles on BFVs are also excellent sniper weapons. They are accurate and effective against low-density command and control, engineer, air defense artillery (ADA), and reconnaissance vehicles. Dismounted infantry dug-in, well-concealed, or positioned in restrictive terrain has a better advantage against armored vehicles at close range. Use obstacles to slow the enemy's momentum and reinforce the effects of direct-fire weapons.

When facing a dismounted enemy, make the best use of your dismounted infantry; use BFVs, tanks, and indirect-fire support to gain overwhelming fire superiority. This will fix the enemy, allowing your dismounted infantry to close to ranges where they can use their weapons to advantage against the enemy.

Field artillery, mortars, engineers, air defense units, CEWI, attack helicopters, and close air support reinforce the company team's capabilities. Use these valuable resources wisely! Make sure your efforts are closely coordinated with supporting units.

Understand the effects of battle on soldiers, units, and leaders. According to an Israeli captain, a veteran of operation "Peace for Galilee," "Most men are human beings who must be trained to kill. Some men are natural killers. You must make them into human beings." A company team commander's main objective is to lead soldiers successfully in battle. Seriously consider how the soldiers might react to the dangers and horrors of war. This gives you a basis for training them psychologically as well as technically. Enforce strong discipline in the unit to achieve the team spirit and willpower soldiers need to survive and win. Achieve cohesion by insisting on doing things *as a unit*. Such preparations will enable the soldiers to perform successfully in the first battle.

In wartime, continue to maintain discipline and build up the willpower and teamwork of the unit. Although many of the soldiers may have undergone the first shock of combat, stay in tune with their state of mind as well as your own. Two sure signs of morale problems are low rates of fire and *no communications* when contact is made. Shooting and talking *during* the fight reduces the soldiers' feelings of isolation on the battlefield. SOPs should recognize this need. Cohesion of the unit must be maintained while maintaining proper OPSEC and fire discipline.

Do not isolate yourself. When you need to talk about what you are experiencing, reach out to someone you trust. You need human contact to keep going.

Section IV. COMPANY TEAM ORGANIZATION

The company team consists of a company headquarters, its organic platoons (minus detachments), attached mechanized infantry or tank platoons, CS, and CSS elements. The company team is task-organized by the battalion task force commander for a specific operation or mission, based on his estimate of the situation. Habitually task organizing the same nonorganic elements to a company team headquarters forms close relationships that are important to teamwork on the battlefield. This is especially important in the areas of CSS and fire support coordination.

Capabilities of the company team. The company team can—

- Conduct operations requiring a high degree of firepower, mobility, armor protection, and shock effect.
- Destroy enemy armor at long and close ranges.
- Destroy mounted and dismounted infantry.
- Conduct continuous operations under most terrain and weather conditions.

THE TANK COMPANY

Tank companies are organized to fight the enemy either pure or with cross-attached mechanized infantry platoons. The company consists of three platoons of four tanks each, and two additional tanks in the company headquarters section manned by the commander and the XO. The tank company also has a first sergeant, an NBC NCO, a company master gunner, a supply sergeant, and an armorer and supply clerk in the company headquarters.

THE TANK PLATOON

The tank platoon is organized to fight as one maneuver element. It consists of four tanks organized into two sections. One section is led by the platoon leader, the other by the platoon sergeant. The tank platoon moves, attacks, defends, and performs other essential tasks to support the company team's mission. The tank is armed with the main gun and two machine guns on the M60 or three machine guns on the M1. (For duties and responsibilities of tank platoon personnel and the operations of the tank platoon, see FM 17-15.)

Capabilities of the tank platoon. The tank platoon can—

- Conduct operations requiring a high degree of firepower, mobility, armor protection, and shock effect.
- Assault unprepared, suppressed defenses.
- Suppress enemy positions with machine-gun fire.
- Destroy enemy tanks and other armored vehicles by fire.
- Assault prepared defenses with infantry and engineer support.
- Support infantry units by fire, movement, and shock effect.
- Exploit success with high cross-country mobility.
- Limit and exploit the effects of mass-destruction weapons.
- Conduct combat operations under limited visibility conditions.
- Employ night-vision devices and other surveillance measures.

Limitations of the tank platoon. The tank platoon has—

- Limited maneuverability in built-up areas and wooded or rugged terrain.
- Vulnerability to antitank weapons.
- Slow speed in crossing water obstacles (no swim capability).
- Difficulty identifying enemy infantry and antitank gunners in close terrain.
- Limited fuel supply for extended operations (requires resupply at least once a day and often twice a day).
- Limited capability to hold ground.

THE MECHANIZED INFANTRY COMPANY

Mechanized infantry companies are organized to fight the enemy either pure or with cross-attached tank platoons. The mechanized infantry can fight either mounted or dismounted. The company consists of three platoons with four BFVs each and a company headquarters. The company headquarters has a BFV manned by the company commander, his master gunner, and possibly the company FSO. The XO operates from an M113, with the communications chief and possibly the NBC NCO. The mechanized infantry company headquarters also includes the first sergeant, supply sergeant, and an armorer.

THE MECHANIZED INFANTRY PLATOON

The mechanized infantry platoon consists of 32 infantrymen mounted in four BFVs. It is organized into a platoon headquarters and three rifle squads. The platoon can fight as one maneuver element, or as two elements. When the platoon fights as two elements, it forms a BFV element and a dismounted element. When the platoon fights mounted, the BFVs are armed with 25-mm main gun and firing port weapons. The dismounted infantry are armed with three Dragon antitank launchers, six M249 squad automatic weapons (or three M60 machine guns and three M15 automatic rifles), six M203 grenade launchers, and five M16 rifles. These weapons are supplemented by light antitank weapons, hand grenades, and mines carried in the platoon basic load. (For further detail on the organization of the platoon and duties and responsibilities of platoon personnel, see FM 7-7J).

Mechanized infantry platoon capabilities. The BFV element can—

- Destroy BMPs and other light-armor vehicles with cannon fire.
- Destroy tanks with long-range ATGM fire.
- Suppress and kill dismounted infantry with cannon and machine-gun fire.
- Maneuver with tanks, swim streams, and move over some ground that tanks cannot negotiate.
- Conduct mounted assaults against unprepared, suppressed defenses.

When dismounted, the infantry element can—

- Fix the enemy to allow maneuver.
- Seize key terrain to facilitate the assault.

- Breach obstacles.
- Conduct assault breaches and dismounted assaults.
- Infiltrate enemy positions.
- Conduct patrols to accomplish reconnaissance and counterreconnaissance.
- Defend against dismounted attacks.
- Secure obstacles to defeat enemy breaching efforts.
- Move over terrain not trafficable by tracked vehicles.

Mechanized infantry platoon limitations. Infantry platoons are limited by—

- BFVs more vulnerable to destruction than tanks.
- Dismounted infantrymen vulnerable to small-arm and indirect fires.
- Infantrymen who need sufficient time to mount and dismount.

COMBAT SUPPORT

The battalion task force receives a fire support element (FSE) from the brigade's direct-support artillery battalion. The FSE coordinates indirect-fire support, close air support, and air space for joint air attack team (JAAT) operations. The company team receives a fire support team (FIST) from the FSE. The FIST is responsible for fire support coordination with the artillery and mortars supporting the company team.

The company team may also receive the following CS elements temporarily to assist it in accomplishing its mission:

- Engineer squad, platoon, or special equipment.
- Stinger team(s) or Vulcan section.
- Ground surveillance radar (GSR) team(s).
- Battalion scout platoon.
- Antitank platoon.

(Use of engineer, air defense, antiarmor, scout, and GSR assets is discussed in Chapter 6.)

FIRE SUPPORT TEAM

The FIST assists the company team commander in planning, coordinating, and executing indirect-fire support. The major duties of the FIST are to—

- Assist in planning indirect fires.
- Coordinate fire support.
- Locate targets, initiate and request fire support.
- Process requests for fire from the maneuver platoons in support of the company team commander's priorities.

- Control the adjustment of fire support.
- Report battlefield information.
- Provide emergency control of close air support.

The FIST is organized differently for mechanized infantry companies and company teams than for tank companies. For mechanized infantry companies and company teams, the FIST consists of a four-man headquarters and three forward observer (FO) parties. Each FO party is attached to one of the organic mechanized infantry platoons and stays with that platoon when it is cross-attached. The mechanized infantry company team FSO normally locates with the company team commander, either in the commander's vehicle or in the fire support vehicle (FSV), to assist the commander in fire support planning and coordination.

The tank company FIST has the same headquarters as the mechanized infantry FIST, but no FO parties. This requires tank platoon leaders and platoon sergeants to perform the FO's duties. All FIST headquarters personnel ride in the FSV, where they can best assist the tank company team commander in planning and coordinating fire support. (For further information on FIST operations, see Chapter 6.)

COMBAT SERVICE SUPPORT

The company team normally receives a company maintenance team and a medical aid and evacuation team from the battalion headquarters and headquarters company as attachments to its CSS. The exact composition of these teams is based on mission, enemy, troops, terrain (and weather), and time available (METT-T).

These attachments and wheeled vehicles in the company team headquarters, form the company trains. The company trains are normally echeloned. Elements are positioned at one of three locations:

- Company team combat trains (maintenance and medical teams).
- Battalion task force unit maintenance collection point (elements of the maintenance team).
- Battalion task force field trains (supply section).

This chapter implements STANAGs 2029 and 2083.

CHAPTER 2

COMMAND AND CONTROL

A company team commander uses command and control to make sure the unit accomplishes its missions. Various tools have been developed to assist a company commander in executing and accomplishing tactical operations. This chapter provides a working knowledge of the tools needed to properly command and control a unit and make sound tactical decisions on the modern battlefield.

Section I. COMMAND AND CONTROL RESPONSIBILITIES

A company team commander divides responsibility among key leaders. Each subordinate must know his job, and how the company team functions while executing its missions. Although every situation is different, the SOP should standardize the way tasks are accomplished. This section shows the basic duties and responsibilities of the XO, platoon leaders, company FSO, first sergeant, and other key personnel in the company headquarters. Once the basics are mastered, add to individual responsibilities as necessary.

The XO is second in command. Acting as the net control station (NCS), he helps command and control the maneuver of the company team. He receives and consolidates the tactical reports from the platoons, then submits them to the battalion task force tactical operations center (TOC). Therefore, the XO must locate where he can maintain communications with the company team commander and the battalion task force TOC. He needs a position with good observation and fields of fire. The XO assumes command of the company team as required.

Before the battle, the XO (with the first sergeant) plans and supervises the company CSS. During preparation for movement, the XO and the first sergeant make sure precombat inspections are complete. Before the battle, the XO makes tactical coordination with higher, adjacent, and supporting units. He may aid in control of a phase of the battle such as passage of lines, bridging a gap, breaching an obstacle, or assumption of control of a platoon attached on the move.

The platoon leaders are responsible for the training, tactical employment, and logistics of the platoon. The platoon leader fights with his platoon and leads by personal example. He must know the

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capabilities of the soldiers and equipment, and how to employ them. Cross-attached platoon leaders can advise the commander on how to make use of their capabilities.

The platoon leaders inform the company team commander of the tactical situation, and the supply and maintenance status of the platoon. They send timely, accurate reports to the XO on tactical matters, and to the first sergeant on logistical matters. Tank platoon leaders act as FOs for the FIST (platoon sergeants will help the platoon leaders).

The company FSO helps plan, coordinate, and execute fire support. During planning, he develops a fire support plan based on guidance supporting the scheme of maneuver. The company FSO completes the fire support column of the execution matrix. He coordinates the company team fire support plan through the battalion FSO to make sure firing units can execute fire requests as rapidly and efficiently as possible. He briefs, or provides the company team commander with information to brief, the company fire support plan. This includes the target list, frequencies, call signs, and responsibilities for calling fires. With the assistance of the FIST, he initiates and relays requests for fire during the operation to support the scheme of maneuver. He may also control battalion-level task force fire missions or close air support (CAS) at the direction of the battalion FSO. He adjusts fire missions, personally or through FOs. The company FSO positions the ground laser location designator (GLLD) where it can support the company team most effectively.

The first sergeant is the senior NCO. He helps with training, maintenance, logistics, and administration of the company team. While the company team prepares for future operations, he coordinates through the battalion combat trains command post (CP) to get the supplies, equipment, and personnel needed to continue the fight. He checks the soldiers to see that they are physically and mentally prepared to fight. Normally, he establishes and leads the quartering party.

During the battle, the first sergeant controls movement and operations of the company combat trains. He makes sure CSS priorities are fulfilled, checks the casualties to make sure they are properly treated or evacuated, and supervises the actions of the company maintenance team. He submits logistical reports to the battalion administrative/logistics center (ALC) on the battalion administrative/logistics net (ALN) and is responsible for the security of the combat trains.

During reorganization, the first sergeant continues to supervise the actions of the company team combat trains and coordinates the resupply of the company team through the battalion combat trains CP. He links up with the logistics package (LOGPAC) at the logistics release point (LRP) and moves it to the company team's position to conduct resupply.

The supply sergeant requests, receives, issues, stores, maintains, and turns in supplies and equipment for the company team. He coordinates specific requirements with the first sergeant and the battalion support platoon leader. When positioned in the battalion field trains, the supply sergeant is supervised by the headquarters and headquarters company (HHC) commander or the support platoon leader. He maintains communication with the company team on the battalion ALN, often through the HHC commander and the combat trains CP. He brings water, classes I, III, and V supplies and other needed supplies to the LRP and helps the first sergeant supervise resupply operations.

The NBC NCO helps plan and conduct NBC operations. He is the primary advisor for all NBC matters. He gives advice on organization and training of company team NBC teams, supervises employment and maintenance of NBC equipment, and advises on mission-oriented protection posture (MOPP) levels and masking and unmasking procedures. The NBC NCO submits reports on nuclear and chemical attacks and contaminated areas to the battalion task force TOC. He advises on operational exposure

guidance for radiological contamination and helps supervise unit decontamination. He helps obtain decontamination and smoke support. The NBC NCO coordinates with the first sergeant and the supply sergeant for resupply of NBC equipment. He operates well forward where he can perform these duties. He normally operates from the XO's vehicle during the battle. In the tank company, he may operate from the FSV or the maintenance M113 if space is available.

The armorer performs organizational maintenance on the company team's small arms and processes work orders on damaged small arms he cannot repair. The armorer normally locates in the company team combat trains where he can quickly troubleshoot problems with small arms.

The master gunner is the expert on vehicle gunnery. He helps train the crews to put steel on target. He also assists the maintenance team turret mechanics in troubleshooting and repairing turret main armament and fire control systems. During the battle, he acts as gunner on the commander's tank, assists in commanding the vehicle, and helps monitor the tactical situation.

The tactical communications chief (mechanized infantry) assists in all aspects of tactical communications. He locates with the XO and operates the company team NCS. He establishes wire communications with the platoons as the situation requires. He receives and distributes signal operation instructions (SOI). He works with the maintenance contact team to repair and install radios during reorganization.

The maintenance team chief (attached from the battalion task force maintenance platoon) supervises the company maintenance team. He leads the company team combat trains in the first sergeant's absence. The maintenance team chief decides whether damaged vehicles are to be repaired in place, or evacuated. He coordinates evacuation and repair with the battalion maintenance officer and manages the use of the company maintenance team mechanics and evacuation assets. The maintenance team chief monitors the tactical situation and directs maintenance team personnel to damaged vehicles.

The senior aidman (attached from the battalion task force aid station) supervises the company team medics. He administers first aid to casualties and helps train the soldiers to perform buddy aid. He can also train and direct company team combat trains personnel to assist in handling mass casualties. He advises the first sergeant of the status of casualties and coordinates with him for additional evacuation and treatment assets. The senior aidman monitors the tactical situation, moving to evacuate casualties from platoon positions when required.

Tank commanders and squad leaders command and maneuver vehicles, weapon systems, sections, and teams. They select and prepare fighting positions, enforce discipline, take care of soldiers and equipment, and lead soldiers to victory.

The individual soldier employs the weapon or weapon system to destroy the enemy. He maintains the equipment, reports what he sees, prepares for combat, and fights. If he understands what to do, his skill at improvisation, his initiative, and his character are the most important assets.

Section II. COMMAND

Weigh the mission requirements and the welfare of the soldiers. Demonstrate concern for the soldiers' well being and lead by personal example to inspire their confidence. Make sure the missions handed down from higher headquarters are accomplished. A commander must often delegate authority down to subordinates. This reinforces and strengthens the chain of command. Do not abuse this delegation of authority. If it is your job, do it. Responsibility can never be delegated. When your subordinates succeed, it is their success. When they fail, accept the responsibility and initiate necessary corrective action.

COMMAND AND SUPPORT RELATIONSHIPS

Sections and platoons, as well as the company, may be attached or cross-attached to other units. The command relationship with other units establishes the lines of authority and support. A company could receive units under any of the following relationships:

- Elements *assigned* to the company, employed by the company commander, and supported with company assets (units, personnel, and equipment).
- *Attached* elements not organic to the company but employed by the company and provided logistical support in an operation. Except for assigned elements, this is the most common command relationship at company level (for example, an infantry platoon attached to the company).
- *Operational control (OPCON)* elements not organic to the company, but employed as if they were attached. Because OPCON units may have unique equipment or other sustenance needs, you will not provide logistical or administrative support.
- *Direct support* elements answer directly to the company team's request for support. Logistical support is normally provided by the parent unit.

INFORMAL RELATIONSHIPS

There are relationships outside the formal ones (assigned, attached, OPCON, direct support) that should exist between units on the battlefield (Stinger or GSR teams operating in the area). Cooperation is essential to the overall success of the mission, even when formal relationships have not been defined. Cooperation must occur when units–

- Are adjacent to each other.
- Occupy the same area.
- Maneuver through the same area.
- Are given parts of the same task to accomplish.

Close cooperation requires coordination. To know how they can help you or how you can help them, talk to the leaders of the other units. Find out if the CS units in the area are getting the supplies they need. When helping the other units, you help your troops accomplish the mission.

Regardless of the command or support relationship, CS and CSS elements in or adjacent to the company team's area of operations should coordinate positions, resupply, and evacuation of casualties. The leaders of these elements should attend the company team order. This will ensure position and maneuver coordination for mutual support, dispersion, and security. Start the coordination; the XO or first sergeant can help. In case of conflicting directives, ask the task force Operations and Training Officer (S3) or commander for clarification. Do not let collocated CS and CSS elements endanger the unit or mission through lack of coordination.

Section III. PLANNING AND DECISION MAKING

Commanders at all levels are responsible for planning tactical operations and making sound decisions. Troop-leading procedures and the estimate of the situation are tools available for decision making.

When possible, these procedures are integrated and accomplished concurrently rather than sequentially. This section incorporates the estimate of the situation within the troop-leading procedures.

Although most of the estimate falls within Step 3 of the troop-leading procedures, the estimate is continuously updated. While the troop-leading procedures are not sequential, the estimate of the situation is always performed in the order shown. The discussion in this section will follow Figure 2-1 in the order of actions taken by a commander in an ideal situation.

TROOP-LEADING PROCEDURES
COMMANDER'S (OPERATIONS OFFICER'S)
ESTIMATE OF THE SITUATION

1. RECEIVE THE MISSION.
2. ISSUE THE WARNING ORDER.
3. MAKE A TENTATIVE PLAN.
   a. Estimate the Situation.
      (Step 1) Analyze the mission in detail.
      (Step 2) List the situation and courses of action.
         - Terrain and weather (OCOKA).
         - Enemy situation (enemy courses of action).
         - Own situation (troops and time available).
         - Courses of action (friendly).
      (Step 3) Analyze courses of action -- wargame.
      (Step 4) Compare courses of action.
      (Step 5) Make a decision.
   b. Expand Selected Course of Action Into a Tentative Plan.
4. START MOVEMENT.
5. RECONNOITER.
6. COMPLETE ORDER.
7. ISSUE ORDER.
8. SUPERVISE.

Figure 2-1. Integration of Estimate and Troop-Leading Procedures.

TROOP-LEADING PROCEDURES

Troop-leading procedures begin when a mission is received and end when that mission is completed. These procedures consist of a series of actions used for planning, coordinating, executing, and supervising tactical operations. Troop-leading procedures help manage time efficiently, allowing the company team to prepare for the mission as completely as time permits. Normally, all steps within the troop-leading procedures must be accomplished regardless of the amount of time available. However, when a fragmentary order (FRAGO) requiring immediate execution is issued during an on-going operation, there may not be time to accomplish all troop-leading procedures.

The exact sequence and timing of each troop-leading procedure depend on the time and information available. The warning order may be issued immediately when the mission is received, or more than one warning order may be issued as more information becomes available. Although reconnaissance never stops, it is best to reconnoiter before completing the plan and issuing the order.

Receive the Mission

The mission is received as an oral or written order. Frequently, advance notice of a mission is received in warning order format. Begin immediately to plan with the information available. Use a *reverse-planning schedule* to distribute time during planning. Allow at least two-thirds of the available time for subordinates to plan and prepare (see Figure 2-2).

A meeting of the battalion task force orders group is a good time to coordinate with other company team commanders and the battalion task force staff. Take the company FSO to the orders group so he can talk to the battalion FSO about the battalion task force fire support plan.

TASKS TO BE COMPLETED	TIME ESTIMATED TO COMPLETE TASK	START TIME	SEQUENCE OF COMPLETION
Cross LD/LC.		0630	9
Conduct Passage of Lines.	10 min	0620	8
Conduct Road March.	20 min	0600	7
Backbrief, Supervise, and Implement Sleep Plan as Required. (Platoon Leaders)	8 hrs, 30 min	2130	6
Issue Oral Order with Sketch Map.	30 min	2100	5
Make Decision and Complete Plan.	1 hr, 30 min	1930	4
Conduct Reconnaissance with XO, Platoon Leaders, and FSO. Conduct Liaison with Units as Required.	2 hrs, 30 min	1700	3
Make Tentative Plan.	30 min	1630	2
Issue Warning Order and Update as Required.	5 min	1600	1

Figure 2-2. Reverse-Planning Schedule.

Issue Warning Order and Begin Preparations

Issue the warning order immediately or as soon as possible. As a minimum, the warning order includes –

- Situation, such as mission type (attack, defend, delay).
- Start time of the operation (start point [SP] time, line of departure [LD] time, be prepared time).
- Time and place to issue the operation order (OPORD).

Include, in the warning order, information the unit needs to begin preparations and precombat checks. Issue additional or follow-up warning orders as more information becomes available. (See Appendix A for orders format.)

Make Tentative Plan

To reach a tentative plan, continue to estimate the situation. (See *Estimate of the Situation* for detailed discussion.) As a minimum, analyze the situation according to the factors of METT-T and develop possible courses of action. There may not be enough information to decide which course of action is best at this point. Use the time available to complete the parts of the plan that are sure to be used. Based on map reconnaissance, establish initial graphic control measures that could support any course of action. Talk with the XO, company FSO, and first sergeant about the estimate so they can start working on their plans.

Start Necessary Movement

Based on the tentative plan, it may be necessary to begin movement immediately, or initiate other preparations. Additional warning orders, FRAGOs, or movement instructions will be issued as the plan is developed. The company SOP should establish procedures to alert the company team for movement and report readiness. Attachments and detachments should be completed by this step. When attaching or detaching platoons, the following items must be coordinated:

- Time and place of linkup.
- Recognition signals.
- Call signs, frequencies, and secure variable.
- Company team SOP.
- Tactical situation.
- CSS status and requirements.

Reconnoiter

With the XO, platoon leaders, company FSO, and a security element, reconnoiter the terrain where the operation will be conducted . While this is being done, the first sergeant and platoon sergeants will supervise the company team's preparations. The purpose of the reconnaissance is to continue the estimate process, confirming or denying the tentative plan. The reconnaissance will be as extensive and detailed as possible within the time limits available. (If there is not time to do a good physical reconnaissance, do a map reconnaissance and confirm the information while supervising the preparation and execution of the mission.) The reconnaissance effort must be organized and based on a plan. Certain reconnaissance tasks may be assigned to each subordinate leader. Platoons may provide reconnaissance patrols to gather information to help in decision making. Each platoon leader will often be assigned a tentative area of responsibility. The following aspects of the enemy and terrain may be reconnoitered in the company team area of operations:

- Observation and fields of fire.
- Cover and concealment.
- Obstacles (natural and man-made).

- Key terrain.
- Avenues of approach (friendly and enemy).
- Vehicle positions (primary, alternate, and supplementary).
- Routes the company team will use.
- Fire control references (target reference points [TRP] and engagement areas [EA]).
- LD and phase lines (PL) (if they can be seen).
- Terrain to the company's flanks and rear, especially along boundaries.
- Danger areas.
- Known or suspected enemy locations.

After the reconnaissance, have all leaders reassemble at a prearranged time to report on their efforts. Use the information gathered to complete the plan.

Complete the Plan

All the facts available have been gathered. Alternate courses of action have been analyzed and compared and the best course of action has been chosen. With the information gained from reconnaissance, finalize the concept of the operation and add details. Take actions to compensate for any disadvantages of the course of action chosen. Complete the company team's scheme of maneuver with enough detail to accomplish the mission without further instructions. Keep the plan as simple as possible so subordinates understand the intent as well as the tasks they are to accomplish. The plan should also be flexible enough to allow quick and effective reactions to changing situations. This is critical when there is limited information about the terrain or the enemy situation.

Organize the plan in the five-paragraph format so the following items are covered in an OPORD or a FRAGO and the SOP:

- Fire support plan (with company FSO).
- Obstacle plan.
- Coordinating instructions.
  - –Chemical protection measures (MOPP level, decontamination sites).
  - –Coordination with adjacent units (front, flank, and rear).
  - –Coordination with higher headquarters.
  - –Coordination with battalion for additional support if required.
  - –Attached units.
- CSS.
- Communications.
- Command and control measures (graphic).

The execution matrix is a tool to help complete and execute the plan. The matrix is not designed to replace a verbal order with an overlay, sketch, or terrain model. It is designed to help the company team commander develop and execute the order. During the operation, refer to the matrix for command and control information.

The following are examples of offensive and defensive matrixes. Use these, modify them, or devise your own.

(1) SECRET (For Training Only) — CLASSIFICATION

(2) 021200Z Feb — DATE/TIME

TASK ORGANIZATION (changes only): (3) 3 PLT/522 ENGR CO

MISSION: (4) A COMPANY ATTACKS 080600Z FEB TO SEIZE OBJECTIVE GREEN (MB 4471)

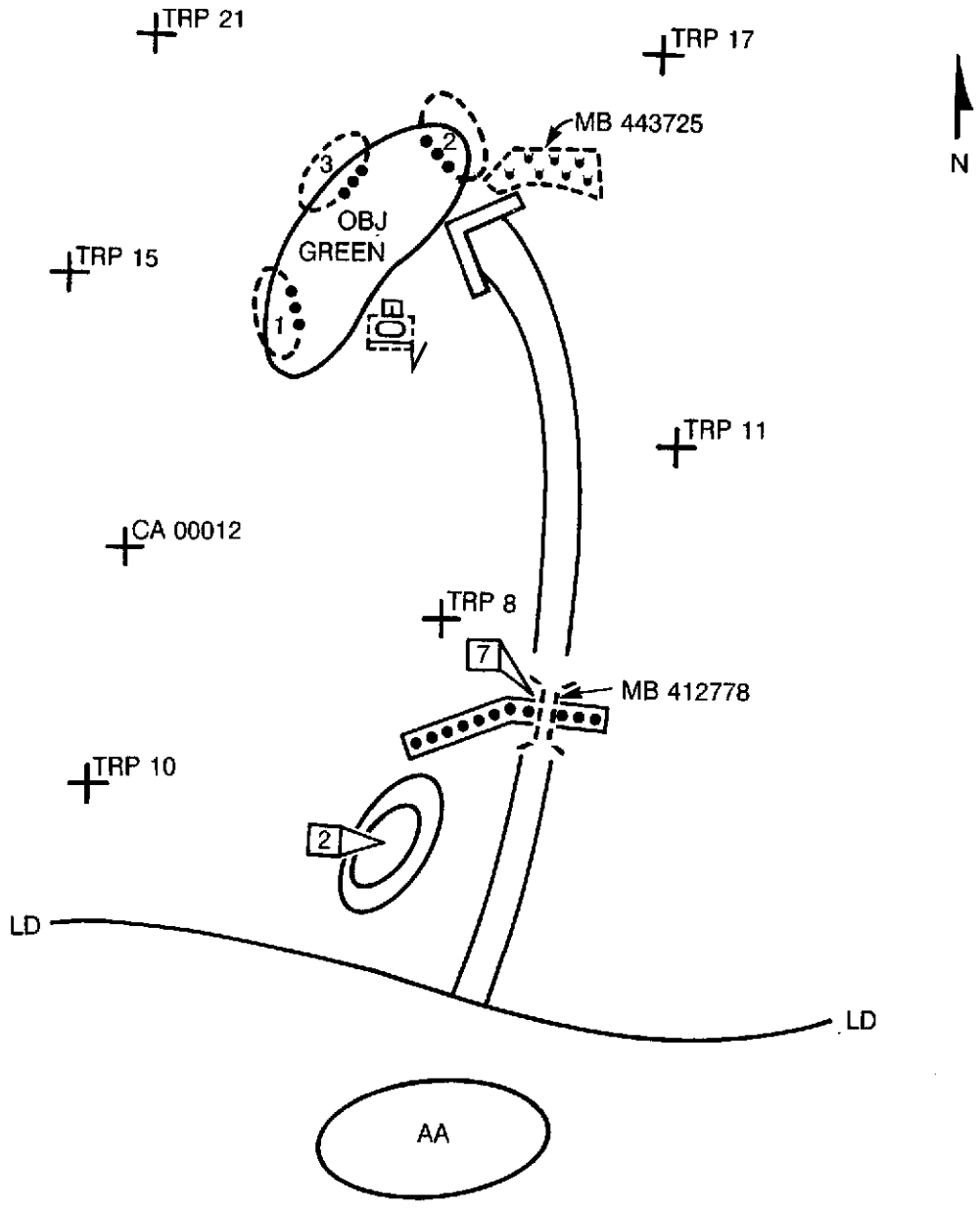
COMMANDER'S INTENT: (5) I WANT TO MOVE IN WEDGE FORMATION TO THE VICINITY OF CP 7 WHERE WE WILL OVERWATCH THE ENGINEERS WHILE THEY BREACH THE MINEFIED. 2D PLATOON WILL OVERWATCH. AS 1ST, THEN 3D PLATOONS MOVE THROUGH THE LANE AND ASSAULT OBJ GREEN ON LINE.

(7) EVENT \ (6) UNITS	(8) CO TM	(9) FSO (10) ENGR	(11) 1ST PLT	2D PLT	3D PLT	OTHER ATTACHED
AA TO LD	Column / MOVE	WITH CDR (10A) / (9A) WITH 1ST PLT	LEAD (11A) / (11B) TRVL	Follow ENGR / TRVL	TRAIL / TRVL	
LD TO CP 7 / ORIENT ON	WEDGE / OBJ GREEN	FIRE CA 0012 (10B) / (9B) CLEAR LANE GRID MB 412778	CENTER (11C) / TRP 8 ON ENGR	LEFT / TRP 10 ON 1ST PLT	RIGHT / TRP 11	
CP7 TO OBJ GREEN	LINE / ASLT OBJ GREEN	FIRE PREP / Follow 1 PLT	LEFT LEAD / ASLT WEST SIDE OF GREEN	ON FROM CP2 / Suppress OBJ GREEN	RIGHT FOLLOW 1ST PLT / ASLT EAST SIDE OBJ GREEN	
OBJ GREEN / ORIENT	CONSOLIDATE / NORTH	REG FPF / EMP AP MINES IN DRAW MB443 725	EAST FLANK OBJ GREEN / TRP 15	WEST FLANK / TRP 17	GTR OF OBJ GREEN / TRP 21	
CALL SIGN (12) / FREQ	C 71 / 54.40	C 54 / B 37	T 91 / 40.00	M 91 / 40.55	P 91 / 38.55	

MOPP LEVEL (13)	CDR WITH (15)	FA CALL SIGN (17)	MORTAR CALL SIGN (18)	CO TRAINS LOC (19)	EMERGENCY SIGNALS (20)
4	1ST PLT	T7Q 43	D5H 43	MB 383721 THEN MB 444710	GREEN STAR CLUSTER- LFT PREP FIRES
RES (14)	**ADA STATUS (16)**	**FREQ (17A)**	**FREQ (18A)**		
50 cGy	YELLOW TIGHT	33.00	46.25		

OTHER INFORMATION: (21)
(code words) STARLIGHT – OBJ SECURED
(priority for resupply) – AMMO, THEN FUEL, THEN FOOD/WATER TO 1ST PLT, 3PLT, 2 PLT, ENGR, HQ.

Figure 2-3a. Offensive Matrix.



Note: PREP and FPF fire control measures have been deleted for clarity.

Figure 2-3a. (Continued.)

(1) SECRET (For Training Only) — CLASSIFICATION
(2) 021200Z Feb — DATE/TIME
(3)

TASK ORGANIZATION (changes only): 3 PLT / 522 ENGR CO

MISSION: (4) BE PREPARED TO DEFEND BP 101 NLT 080500Z FEB

COMMANDER'S INTENT: (5) I WANT TO KILL THE COMBAT RECON PATROL IN EA HURT. WE SHOULD BE ABLE TO DESTROY 2-4 VEHICLES OF THE FORWARD SECURITY ELEMENT IN HURT. THE REST OF THE FORWARD SECURITY ELEMENT WILL BE DESTROYED IN EA KILL

(7) EVENT / (6) UNITS	CO TM (8)	FSO (9) ENGR (10)	1ST PLT (11)	2D PLT	BFV'S 3D PLT	OTHER DISMOUNT ATTACHED INF
OCCUPY POSN / ORIENT	BP 101	OP 1 (OP 2) (9A)	22 / EA HURT WEST TRP 00015	67 / EA HURT	42 / EA KILL	STRONG POINT 99 (11A) / EA KILL (11C)
PREPARE POSN / ORIENT	BP 101	REG FPF CA 2212 (9B)	27 / EAST OF TRP 00015	61 / EA HURT EAST OF TRP 00018		
RECON	BP 103	OP 2 (10A) / (33) BLOCK ROAD	33	42	99 FOR LINK-UP (11B)	
TARGET PRIORITY EA HURT / EA KILL	TANKS / BMP	DPICM - HURT DPICM AND HE KILL	TANKS ENGINEER / TANKS BMP INFANTRY	TANKS / ENGR TANK ZSU	BMP / ENGINEER	BMP DISMOUNT INF
EXECUTE OBSTACLE		PRIORITY TO STRONG POINT 99 THEN TO A19 (10B)	A17	A18		STRONG POINT 99
CALL SIGN (12) / FREQ	C71 / 54.40	C54 / B37	T91 / 40.00	M91 / 40.	P91 / 38.55	

MOPP LEVEL (13)	CDR WITH (15)	FA CALL SIGN (17)	MORTAR CALL SIGN (18)	CO TRAINS LOC (19)	EMERGENCY SIGNALS (20)
4	1ST PLT	T2Q 43	D5H 43	MB 38 3721 THEN MB 444710	GREEN STAR PARA FIRE FPF
RES (14)	**ADA STATUS (16)**	**FREQ (17A)**	**FREQ (18A)**		
50 cGY	YELLOW TIGHT	33.00	46.25		

OTHER INFORMATION: (21)
(code words) LONGHORN - FIRE FPF
(priority for resupply) - 3D, 2D, 1ST, ENGR.

Figure 2-3b. Defensive Matrix

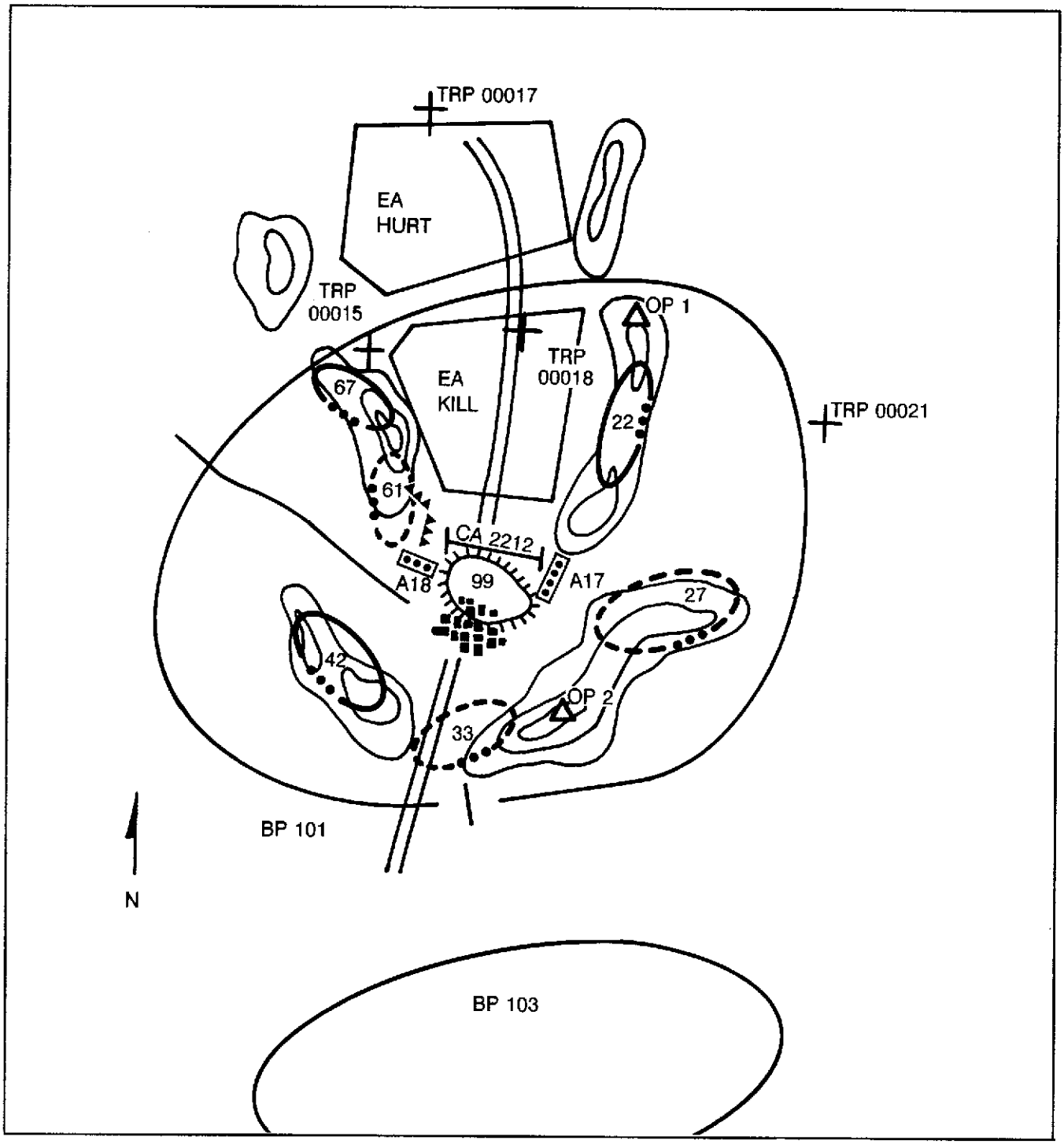


Figure 2-3b. (Continued.)

KEY TO EXECUTION MATRIX

1. Classification: Normally "secret" or "secret for training only."
2. Date/time: Date and time the company order is issued.
3. Task organization: Changes from the last operation or company SOP.
4. Mission: Company team mission statement. What, who, when, where, and why an operation will occur. All essential tasks to be accomplished are addressed.
5. Commander's Intent: The commander's concise summary of mission and concept.
6. Units: Listed across—all subordinate units that need the order.
7. Events: Tasks or actions dividing the operation into logical segments where significant changes in the scheme of maneuver are anticipated.
8. Co Tm: What the company team is doing and how or where.
9. FSO: What the FSO is doing expressed as his location (9A) or his actions (9B).
10. Engr: What the engineers do, expressed as a location on the ground (grid coordinates) or in the company formation (10A), or the actions (10B). (Appropriate only when engineers are attached, OPCON, or direct support to the company team.)
11. Other units: Other attachments such as the scout platoon, mortar platoon, ADA section. Separate columns are used for each subordinate unit. Each column describes what the unit is doing, location (11A), formation or method of movement (11B), or orientation (11C).
12. Call sign and frequency: Call signs and frequencies for each unit *at the time the operation will commence*. Since the FSO and the engineers are on the company command net, the company call signs have been given; the engineer platoon frequency could also have been included.
13. MOPP level: Mission oriented protective posture level, expressed as 0 through 4.
14. OEG: Organization exposure guidance, expressed in centigrey (cGy).
15. Cdr with: Where the company commander will be *at the beginning of the operation.*
16. ADA status: Expressed as a color (red, yellow, white) and a word (free, tight, hold) describing the threat condition and relative freedom to engage aircraft.
17. FA call sign and frequency: Call sign and frequency on which fires may be requested by voice when needed. Backs up the FSO if he is incapacitated. Normally the quick fire frequency found in the SOI.
18. Mortar call sign and frequency: Voice net that answers calls for fire from the task force mortar platoon. Normally the mortar FDC in the SOI.
19. Company trains location: Initial and subsequent planned location for the company team combat trains.
20. Emergency signals: Any emergency signal, pyrotechnic or sound, not covered in the company SOP.
21. Other Information: Any additional coordinating instructions not covered in other parts of the matrix. Could include codewords, password and countersign, priority of artillery or mortars, priority of resupply.

Issue the Order

Issue the order at the time and place stated in the most recent warning order. If possible, issue the order while overlooking the terrain on which the operation will be conducted. If this is not possible, use aids (maps, overlays, sand tables, terrain tables, or terrain sketches) to help subordinates visualize the terrain. Before starting the order, make sure everyone copies the operation overlay and matrix and orients the map properly. Discuss the intent and concept of the operation by painting a word picture of how you visualize the upcoming operation; include contingencies and the company's reactions to those contingencies. Ensure all subordinate leaders understand how their missions fit in the overall scheme of maneuver and support the intent of the operation. Before concluding the order, have subordinates repeat the critical instructions given to them.

Supervise

After the orders are issued, subordinates use the remaining time to complete their troop-leading procedures. As these preparations are under way, supervise your subordinates carrying out the instructions. Give them a reasonable amount of time to execute their orders, then check them by a combination of briefbacks, rehearsals, and inspections.

Briefbacks are subordinates' briefings to you on their plans *after* they have conducted their reconnaissance and completed their estimate of the situation. They should brief back before issuing their orders; this gives you a chance to modify their plans if needed. Always allow subordinates time to make the required modifications, but do not make them wait for approval to issue their orders. Briefbacks may be individual or grouped, as the situation requires. Generally, it is better to have all leaders brief back together. This provides a chance to make changes to the operation and conduct final coordination with all key leaders. Do not forget to include the XO, FSO, and first sergeant in this process.

Rehearse

Rehearse actions critical to the accomplishment of the mission to ensure the unit can accomplish these actions given its state of training, the orders issued, and the terrain and weather conditions expected.

There are several ways to conduct rehearsals. For a complex mission (assault breach of a strongpoint position or deliberate defense of battle positions) when time is available to rehearse in a secure area, *conduct an exercise with the entire company team.* When space is limited or you want to crawl initially, *conduct the exercise at reduced intervals and speeds.* A third technique is to *conduct the rehearsal with key leaders* (mounted or dismounted). Another variant of this method is to *conduct the rehearsal on a terrain model or sand table.* Always try to conduct full rehearsals, especially when receiving an attached platoon that you have not worked with.

When conducting rehearsals, emphasize events that trigger different contingencies. This helps subordinates understand the intent. Go over fire support and maneuver. Practice what targets will be fired, when they will be fired, and who is responsible to call for and adjust fire. Rehearse backup procedures in case the leader responsible for calling and adjusting fire becomes incapacitated.

Inspect

Inspect by physically checking to see what is being done. An *operational checklist* may be helpful as a memory cue. This checklist is part of the unit SOP. The company checklist should use the same general

format as the platoon checklists. Ask the platoons to turn in the checklists at a certain time, to give you an overall look at the company. A report halfway through preparation time will allow you to gauge progress and redirect the priority of tasks. Filled-in checklists are *not* a substitute for personally inspecting preparations. It is not necessary to conduct a formal inspection of the progress of platoon preparations; just look and see what is being done. You can often tell how well the NCOs have done the precombat checks by walking through the positions. Talk to the soldiers; they will tell how much information has filtered down to them and what they have done to get ready for the next mission.

When deficiencies are spotted, correct them. Remember, on-the-spot corrections provide a chance to train subordinates and reinforce the chain of command. When something is obviously wrong, bring it to the attention of the soldier in charge and make him fix it. The following list may help you inspect the unit preparations:

- Do the soldiers know what the company is doing and where they fit into the platoon leader's plan?
- Do the soldiers know what visual signals, call signs, and frequencies are being used? Do they know the challenge and passwords?
- How well are the fighting vehicles prepared to move? Are soldiers using preventive maintenance checklists to conduct before-operations checks? Are camouflage nets up or down?
- Are fighting vehicles in positions where they can boresight and complete their prepare-to-fire checks?
- What has been done with the ammunition boxes used for resupply? Are they disposed of properly, still waiting to be opened, or broken open in a pile?
- Are vehicle load plans being enforced?
- Are soldiers wearing their equipment properly?

Coordinate

Coordination is another task necessary for supervising the unit preparations. Responsibility for coordination is generally the same as for establishing communications (higher to lower, rear to front, and left to right). The XO, first sergeant, and other leaders help complete coordination. Coordination is critical for –

- Adjacent units to tie in flanks and provide mutual support (planned maneuvers and security such as OPs and patrols).
- Overwatch, battle hand-over, and passage of lines (exchange routes, fire plans, and recognition signals).
- Engineers to confirm obstacle locations and ensure they are covered by fire.
- Air defense artillery (ADA) and GSR to make sure their positions do not give away the team's position, they support the company team with air defense protection and information on likely avenues of approach, and their leaders know when and how the company team will move.
- Battalion Intelligence Officer's (S2) reconnaissance and surveillance plans.
- Battalion Supply Officer's (S4) CSS plans including LRP, unit maintenance collection point (UMCP), aid station, prestocks, combat trains, and decontamination sites.

ESTIMATE OF THE SITUATION

The estimate of the situation is the basic problem-solving tool for making sound decisions. Use this tool with the time and information available to develop the most effective solution to a tactical problem. Although the estimate of the situation follows a logical, sequential format, generally there is not enough time to conduct a formal, in-depth analysis on the battlefield. Memorize the format of the estimate and the planning tools contained in this section until they are instinctive, so you can make a sound decision quickly (see Figure 2-1).

Figure 2-1 shows the relationship between the factors of METT-T, the estimate process, and the decision. The key word, METT-T, summarizes the facts bearing on the tactical problem at hand. It stands for mission, enemy, troops, terrain (and weather), and time available. METT-T represents the input into the estimate process. During mission analysis and situation analysis, these factors are analyzed in relation to each other. When facts are not available to continue the estimate, make logical assumptions based on experience and knowledge. The purpose of this analysis is to determine how these factors influence the course of action. Analyze the mission in relation to the enemy and the terrain; analyze the enemy in relation to the troops and the time and space available.

Based on this conclusion, use the estimate to develop alternate courses of action. Analyze each course of action and try to visualize an outcome. Compare the outcome of each course of action to see which is best. Then, make a decision. The decision is the product of the estimate and forms the concept of the operation.

Use the estimate process each time you make or modify a decision. Repeat this process many times before and during a tactical mission to update the estimate constantly, based on new METT-T information.

Analyze the Mission

The company team's mission is the primary task(s) to be accomplished and the purpose to be achieved. The mission includes any constraints on actions and contains elements of who, what, when, where, and why. (How the mission will be accomplished is found in paragraph 3 of the OPORD.) The purpose of a mission analysis is to enable you to fully understand the assigned mission and identify specified and implied tasks conditional to success. To do this, identify what must be accomplished and in what sequence. Specified tasks are stated in the following portions of the battalion task force order:

- Battalion task force mission statement.
- Scheme of maneuver.
- Specific instructions.
- Coordinating instructions.
- Execution matrix.
- Operations overlay.

Implied tasks are additional tasks that may not be stated, but are required to accomplish the mission. Implied tasks are nonroutine or inherent tasks that must be performed to accomplish the mission. (SOP tasks refueling and rearming are examples of implied tasks.) Responsibilities such as providing flank security for the company or clearing an area of enemy forces are inherent implied tasks. Address these in paragraph 3 of the OPORD.

Having identified the specified and implied tasks that are necessary to accomplish the mission, place those essential tasks in the restated mission. This becomes the first consideration in the estimate of the situation and paragraph 2 of the company OPORD.

The battalion commander will state the mission so his intent and the intent of the brigade commander are fully understood. Intent will tell why the task force has been given its mission, the results expected, and in broad terms, how the results will be achieved. Intent is important because of the confusion and communication problems associated with combat. The intent must be articulated by commanders at every level and understood two levels up. Commanders must keep the intent simple, clear, and specific. If you cannot tell the soldiers what you want in a sentence or two, rethink the mission. For example, "I intend to defend battle position 50 until we can destroy the advance guard of the first echelon battalion."

Analyze the Situation

Gather information about the terrain, enemy, time, and troops. The battalion S2 conducts the intelligence preparation of the battlefield (IPB). The products of the IPB are as follows:

- Event and situational template.
- Terrain analysis.
- Weather data.
- Intelligence annex to the OPORD.
- Priority intelligence requirements and intelligence collection tasks.

(For more information about how the IPB is conducted, see Chapter 2, FM 71-2 or FM 34-1.)

Terrain analysis is an examination of the military aspects of the terrain and their effects on friendly and enemy capabilities to move, shoot, and communicate. Weather and terrain should be analyzed concurrently as they both have major impacts on operations.

The military aspects of terrain include the five factors of OCOKA:

O - Observation and fields of fire.

C - Cover and concealment.

O - Obstacles.

K - Key terrain.

A - Avenues of approach.

- *Observation and fields of fire.* Terrain and vegetation affect capabilities of friendly and enemy forces to observe one another and engage each other with direct-fire weapons. Identify and cover dead space with sensors or indirect fire. In the offense, use dead space to help move friendly forces. Select terrain with good observation and fields of fire as potential overwatch positions. In the defense, construct or improve fields of fire by cutting down trees, power lines, and vegetation. Intervisibility, unobstructed view from one point to another, is another factor of observation and fields of fire. In the defense, select battle positions so friendly forces' observation and fields of fire overlap.

  Note: When planning an operation, particularly defensive operations, a profile of the area of operation may be helpful in determining visibility (defiles), identifying areas that are hidden, and planning for moving earth (engineer work). (See FM 21-26 for information on how to construct a terrain profile.)

- *Cover and concealment.* Cover is protection from enemy fire. Concealment is protection from enemy observation. Ideally, a position will have cover and concealment; these are essential to provide protection against direct and indirect fires and to deceive the enemy about locations and intentions. Advances in technology such as thermal sights, have affected the availability of concealment. When routes or positions with cover are not available, consider the capability of thermal sights to see through foliage and during limited visibility.
- *Obstacles.* These are natural or man-made obstructions of two basic types—tactical obstacles and protective obstacles. Tactical obstacles are employed to reduce the enemy's ability to maneuver, mass, and reinforce and to increase his vulnerability to fires. Obstacles are designed to disrupt, turn, fix, or block the enemy. Protective obstacles are a critical part of force survivability. Obstacles must be observed and targeted by direct or indirect fire. Tactical and protective obstacles may be either existing or reinforcing. The following are examples of existing obstacles:

  –Canals.

  –Swamps.

  –Dense forests.

  –Built-up roads.

  –Railroad beds.

  –Deep, steep-sloping ravines.

  –Common cities and towns.

  –Rivers.

  The following are examples of reinforcing obstacles (see Appendix C):

  –Minefields.

  –Tank ditches.

  –Abatis.

  –Tank walls.

  –Road craters.

  –Barbed wire.
- *Key terrain.* This is terrain that dominates, controls, or influences avenues of approach. If controlled by a force, key terrain affords an advantage. Decisive terrain, if controlled, offers a decisive advantage to the controller. Key or decisive terrain could be a dominating hill overlooking low ground, a major road junction, or even a river or stream crossing site. Key terrain must be controlled by fire, obstacles, or the relative positioning of friendly forces.
- *Avenues of approach.* These are air or ground routes of an attacking force (platoon, company, battalion) leading to its objective or key terrain in its path. Avenues are evaluated by their—

  –Potential to support maneuver (trafficability and space).

  –Access to the terrain and adjacent avenues.

  –Degree of canalization.

–Cover and concealment.

–Observation and fields of fire.

–Obstacles.

–Ease of navigation.

–Trafficability.

–Maneuver space.

General characteristics of mounted avenues of approach are –

–Open, firm ground with little or no vegetation.

–No slopes greater than 45 percent.

–No waterlogged soil (swamps, bogs, stream banks, or rain-soaked soil).

–No trees 8 to 10 inches in diameter, with less than 5 meters separation.

–No streams more than 3 meters wide and 1.5 meters deep or without rocky bottoms.

General characteristics of dismounted avenues of approach are –

–Moderately wooded areas with passable slopes (no cliffs).

–Trails and roads through densely wooded areas.

–Built-up areas.

–Fields with dense vegetation.

General characteristics of air (high performance) avenues of approach are –

–Wide valleys with landmarks easily recognized from the air.

–Road networks.

Air (helicopter) avenues of approach are generally characterized by narrow valleys with hills and wooded areas as backdrops.

Avenues of approach may contain mobility corridors and cross compartments. Mobility corridors are areas within avenues of approach permitting movement and maneuver. These are mostly open areas with good routes for rapid movement and mutual support. When existing or reinforcing obstacles cross an avenue of approach, they form lines of resistance called cross compartments.

When analyzing avenues of approach, determine the dimensions of the area. Study the S2's terrain analysis to determine the overall terrain conditions in the battalion task force area of operations. Next, analyze the terrain that influences the mission. Mark out the existing obstacles to mounted and dismounted movement. Existing obstacles are classified as either "slow-go" or "no-go" terrain for mounted or dismounted movement. Special equipment or engineer support is needed to cross no-go terrain. Slow-go terrain hinders movement to a lesser degree. Neither special equipment nor engineer support is needed to cross slow-go terrain, but they can be used to enhance mobility. When depicting no-go and slow-go terrain on an overlay, mark the no-go terrain in dark red and slow-go terrain in light red or orange. Use cross-hatching to distinguish between no-go and slow-go terrain.

The next step is to identify mobility corridors for battalion, company, and platoon formations. Use the following frontages to determine the size of unit that can deploy along each mobility corridor:

- Battalion – 1,000 to 2,000 meters.
- Company – 500 to 1,000 meters.
- Platoon – 100 to 200 meters.

Figure 2-4 shows an example of how this is done.

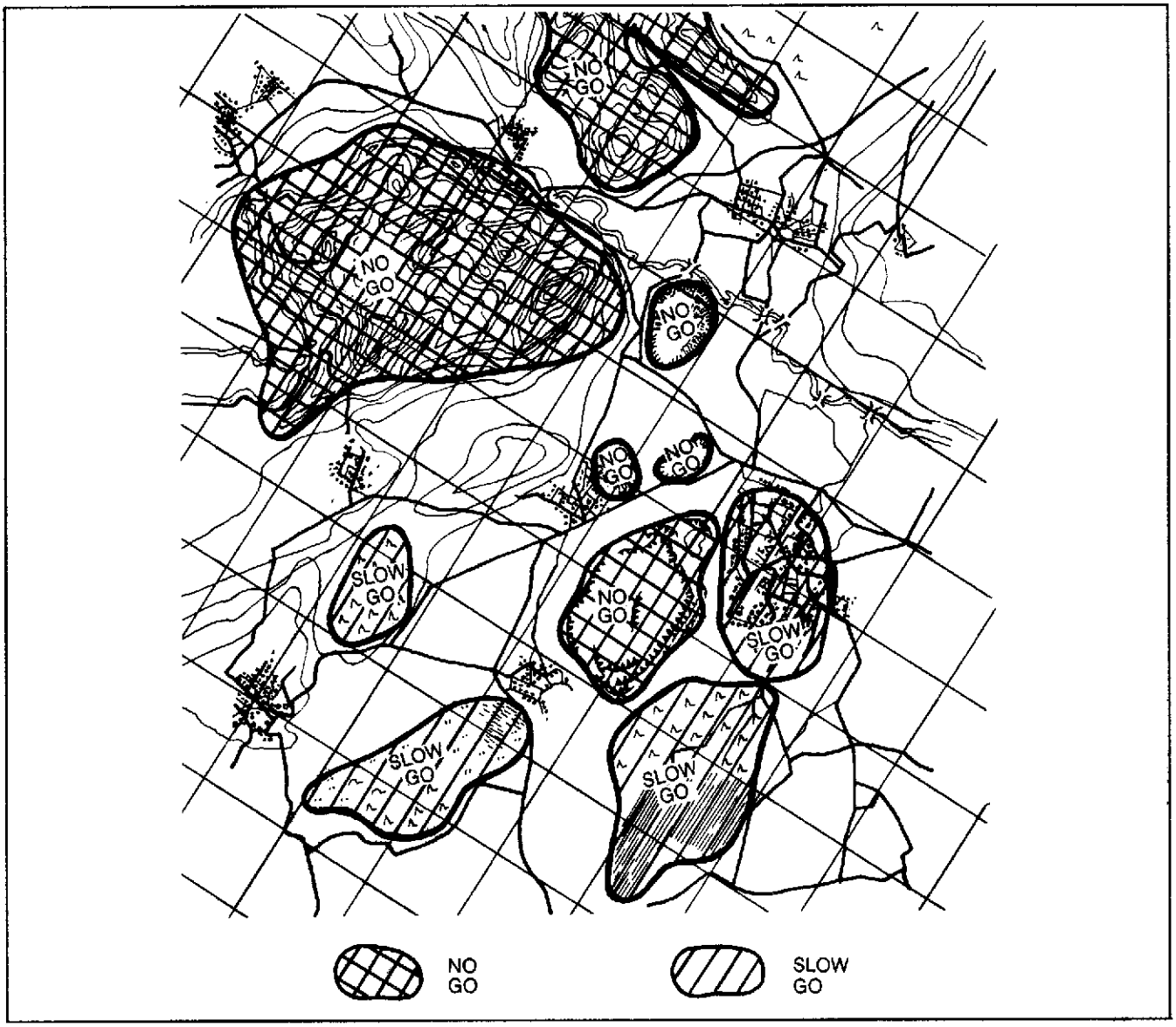


Figure 2-4. Identify Mobility Corridors.

Now, identify the avenues that friendly forces and the enemy can use to maneuver. Then estimate alternate courses of action available to friendly forces and the enemy. When analyzing enemy avenues of approach, use knowledge of the enemy's doctrine and common sense to form reasonable deductions.

Two parallel platoon mobility corridors could form a company avenue of approach if they are consistent with the company's frontage. A single platoon mobility corridor could accommodate a company in column formation, but the company could not properly deploy into attack formation. A commander using such an approach would be taking an obvious risk. Do not ignore even the smallest mobility corridor.

Draw the identified avenues of approach in red (enemy) or blue (friendly) depending on whether they are friendly or enemy avenues. At the beginning of the avenue of approach, place the unit symbol of the size and type of unit that can use it. Label each avenue with a number, code word, or letter. (Figure 2-5 shows an example of this method.)

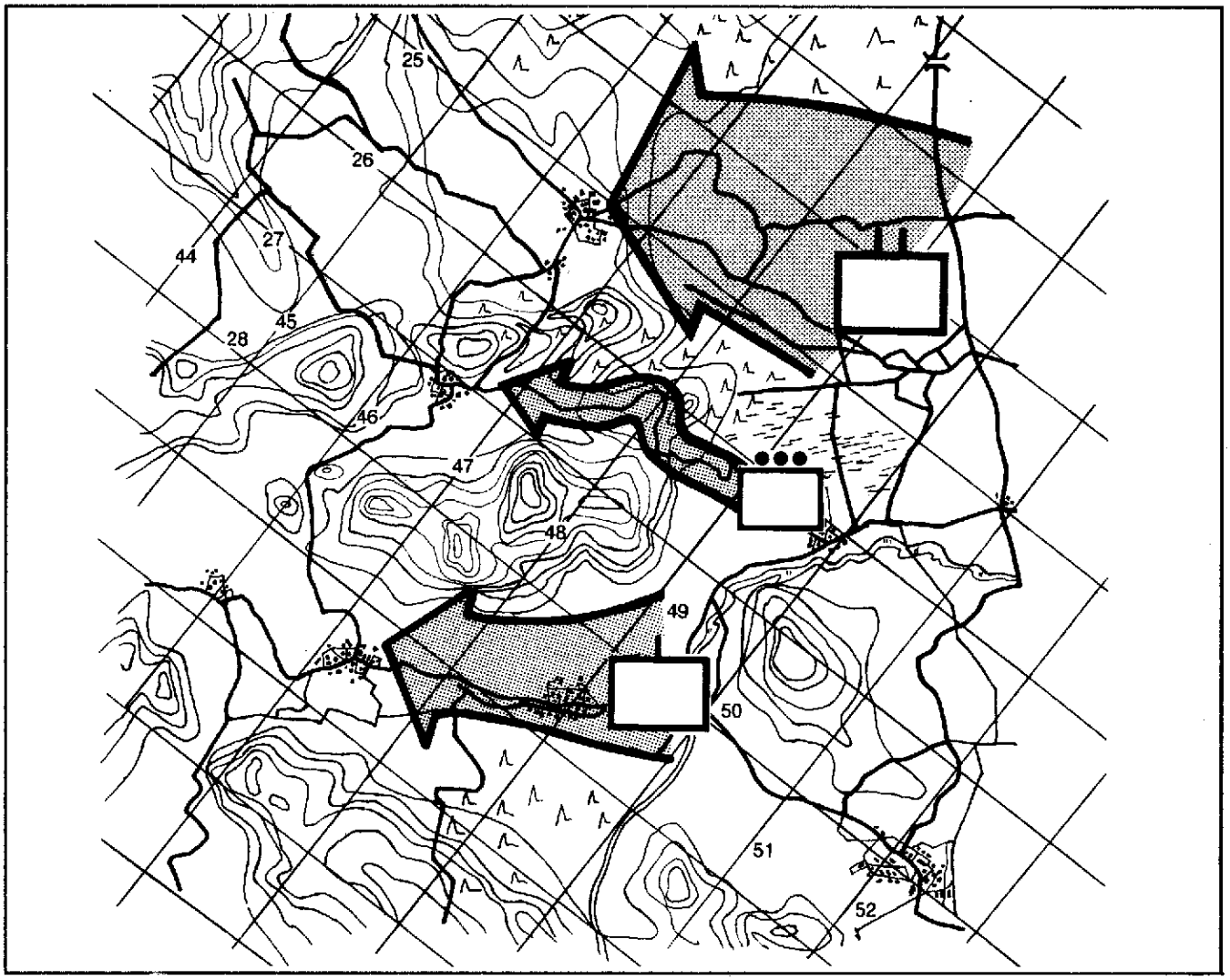


Figure 2-5. Avenues of Approach Marked by Size and Type of Unit.

Even the best planned attack of an armor force can be stopped by unexpected adverse effects of nature. Weather affects terrain, equipment, visibility, and soldiers. An armor force attacking up a steep hill can be stopped by ice. Snow, dust, humidity, and temperature extremes all impact on human efficiency and limit the utility of weapons and equipment. Soldiers tend to seek shelter and neglect tasks that expose them to the elements. Poor visibility makes local security more difficult, and decreased trafficability impedes maneuver. Generally, inclement weather favors the attacker, though mobility and command and control are degraded. Defending troops are likely to be less alert, and weapons will not be as effective. An attacker can more easily close with, isolate, and destroy a defending force during limited visibility conditions. A summary of weather effects follows:

WEATHER CONDITION	ELEMENT AFFECTED
Temperature	Soldiers, Gunnery, Equipment
Barometric Pressure	Gunnery
Humidity	Soldiers, Equipment
Precipitation	Soldiers, Trafficability, Equipment
Visibility	Observation
Light Data	Observation

Analyze enemy forces to determine their composition, disposition, and most probable course of action. Terrain and weather analysis assists in developing courses of action. During step 3 of the estimate process use the enemy's most likely course of action to war-game against friendly courses of action.

When not in contact at company level, the battalion S2 provides the most current information about the enemy. Once in contact with the enemy, the company team commanders will have more information than the S2. He can analyze only what is reported. The following information is of special interest:

- What is the enemy's composition, strength, and capability?
- What is the enemy's disposition and what avenues of approach support his tactics and size?
  - –How long has the enemy been in his current location?
  - –If the enemy is defending, how are his forces arrayed? Where are his kill zones?
  - –Does he have reserve forces? Where are they?
- What tactics will he use? What are his courses of action?
- Has the enemy employed chemical agents, nuclear weapons, or electronic warfare (EW)?
  - –What are his chemical capabilities?
  - –If he has used NBC, what degree of success has been achieved?

The S2's IPB will answer many of the above questions. Making situational templates (combined analysis of the enemy and the terrain) of enemy forces on the terrain will provide clues to the enemy's disposition and courses of action.

A doctrinal template is the normal pattern of positions for the enemy's forces without considering the terrain. Compare what the enemy's doctrinal template says he will do with the terrain. (Examples of

doctrinal templates that reflect enemy tactics are contained in Chapters 3 and 4. Study and memorize these templates.)

With the doctrinal template firmly in mind, make a situational template. Modify the doctrinal template to fit the enemy's strength and the terrain. Analyze what you would do if you were in the enemy's position. From this analysis, deduce two or three possible enemy courses of action. Prioritize these courses of action from most likely to least likely. The following are examples of enemy courses of action that may be encountered in a defensive mission:

- Course of action A – most likely. The enemy will attack in two echelons with one company on avenue of approach 1 and one company on avenue of approach 2. If the first echelon is stopped, it will conduct a dismounted attack on avenue of approach 3 with the second echelon company.
- Course of action B – least likely. The enemy will conduct a meeting engagement using avenue of approach 1 as a march route. The combat reconnaissance patrol will attempt to use avenue of approach 3 to bypass our defenses. The forward security element will attempt a hasty attack on avenue of approach 1. If the forward security element is stopped, the battalion main body will attack on avenue of approach 2 and avenue of approach 3 with a company on each avenue.

Time and Space

Time is the critical factor affecting planning and execution. The first indication of the available time is the battalion warning order. The time the company has to execute or be prepared to execute the mission determines the detail of planning. Analyze time in relation to the tasks to be accomplished and the space to be covered by movement. When analyzing the tasks, use a reverse-planning schedule similar to the one shown in Figure 2-2 (especially when the operation is time-phased involving scheduled fires). When using this method, start with the first objective and plan backward through each intermediate objective or task to the beginning of the operation (such as the LD).

When the operation is controlled by events rather than time, estimate the time for each task independently. This will help determine how long it will take to accomplish each task. Consider –

- Time for subordinates to prepare and disseminate orders.
- Movement times from assembly areas or present positions to SP, release point (RP), sectors, battle positions, attack positions, or LDs.
- Time from crossing the LD to seizing the objective or specific key terrain, and time for sequencing units and events associated with it.
- Time key terrain must be held.
- Time the company will have to consolidate and reorganize before an enemy counterattack.
- Time it will take the enemy to decide and react.
- How the time estimate schedule will be affected by imposing varying levels of MOPP.
- Speed of execution that may take priority over security (operations and formations will be adjusted accordingly).

Time and Distance Formula

This formula is used to calculate movement times of friendly and enemy forces and engagement times (windows). The time and distance formula is: Time (T) = Distance (D)/Rate (R).

Example: The unit must move 1 km (.6 miles) and the rate of march is 17 kmph (10 mph).

T = 1 km/17 kmph = .0588 hr
60 mins X .0588 = 3.53 mins
.6 mile/10 mph = .06 hr
60 mins X .06 hr = 3.6 mins

Apply the time and distance formula using the size of the area where targets will be exposed for a particular distance and the movement speed expected by the threat forces for the rate

Troops Available

Know what troops, equipment, CS, and CSS are available. The basic question is, "Is there enough to accomplish the mission?" Compare the force to the enemy considering the terrain and space. Make sure the status of the unit is correct. As a minimum, know—

- Number of weapon systems (tanks, BFVs, rifle teams).
- Critical weapons available based on mission requirements.
- State of training and discipline.
- Physical condition and degree of fatigue of the soldiers.
- State of unit morale and its effect on both mission accomplishment now and in the future.
- How the platoons have performed on past missions, including special capabilities the platoons might have.
- Location and disposition (amount of movement required by platoons to assemble and move to the operation).
- State of maintenance and supply.
- Support available from other company teams. (Will another company team support the attack by fire? Can disengagement be covered by another company?)
- CS assets available (status, location, capabilities, and mission) to the company and those in support. (Are indirect fires available? Does the company team have priority of fires from mortars or artillery, a priority target or final protective fire [FPF]?)
- CSS available. (Can battalion push critical supplies forward? How far is the main supply route [MSR] and collection points? Is air medical evacuation [MEDEVAC] available?)
- Effects of weather on soldiers and equipment.

Develop Courses of Action

With this information, develop at least two courses of action based on the restated mission. Courses of action represent possible solutions to the accomplishment of the mission. They basically answer the questions who, what, when, where, and how. Courses of action, although stated in general terms, are formulated in enough detail to distinguish one from the other and, with a sketch, provide a basis for a flexible analysis.

There are probably not enough troops to meet all the requirements without maneuvering some or all of the force. Devise at least two ways to counter the enemy's capabilities with sufficient numbers of tanks, BFVs, and rifle teams.

The analysis of a course of action will identify its advantages and disadvantages. The criteria for evaluation of a course of action are broken into three groups:

- Mission accomplishment.
- Principles of war and AirLand battle imperatives.
- Significant factors identified during the war game.

This analysis is best accomplished by war-gaming each course of action. In addition to comparing courses of action, the war-game process will lead to the identification of decision points.

The war game is a disciplined and orderly approach to the analysis of a course of action. It is a conscious attempt to visualize the flow of a battle when given the friendly course of action, the enemy's course of action, and an area. It represents an attempt to foresee the action, reaction, and counteraction dynamics of a battle, realizing that the enemy is not passive but will try to thwart and circumvent your actions. While war-gaming, consider the following:

- How the enemy is likely to react.
- What actions will counter the enemy's reaction.
- How much risk is taken with each action.
- When each action must be triggered to achieve the desired results (identify the trigger points).
- Which enemy actions provide clues to his course of action.
- When to commit to a course of action (identify the decision points).
- How to shift to another course of action if the enemy takes a less likely course of action.

Decision points are points in time and space where a critical decision must be made. Decision points provide a point of reference during the execution of an operation. George S Patton Jr stated it clearly in 1941 when he said, "It is a mistake to make a decision too early, and it is a mistake to make a decision too late." Decision points, therefore, take into account the time required to make a decision.

Decision points are based on an in-depth analysis of the military aspects of terrain and enemy doctrine. At company level, they include any area where the company becomes more vulnerable to enemy actions (choke points, stream or river crossing sites, large open areas [kill zones], cross compartments, areas of suspected enemy occupation, and any low ground where chemical weapons have been used [chemical agents may have higher concentration and longer duration on low ground]). Company actions triggered by decision points are—

- Execution of direct or indirect fires.
- Changes in movement technique.
- Formation changes.
- Establishment of overwatch positions.
- Establishment of breaching teams.
- Use of smoke.
- Reconnaissance by fire (direct and indirect).
- Movement to supplementary positions.

Trigger points consider the lead time necessary for the unit to react. This relates to the control measures established and the instructions given to subordinates. Control measures used as trigger points are: PLs, checkpoints, objectives, and EAs. Trigger points are normally related to specific events or enemy actions. A PL or a set of TRPs might be used as a reference to initiate direct fires or a specific maneuver. ("When we cross PL RED, we will enter a wedge formation." or, "When the enemy crosses between TRP 305 and TRP 307, 1st and 2d platoons will initiate TOW missile fires.")

Compare Courses of Action

To determine the best course of action, compare *all* courses of action. Base the comparison on the analysis, including factors of METT-T and the war game of each course of action. A technique of comparison is shown in Figure 2-6. This matrix allows the use of the plus and minus system. Develop this further by weighting a particular element. Weighting can be done with additional plus or minus marks or a numerical value system.

ADVANTAGES COURSES OF ACTION 1	2	3		DISADVANTAGES COURSES OF ACTION 1	2	3
____	____	____	Uses Observation and Fields of Fire to Best Advantage or to Enemy Disadvantage	____	____	____
____	____	____	Controls Key Terrain Early	____	____	____
____	____	____	Avoids Obstacles	____	____	____
____	____	____	Uses Cover and Concealment Best	____	____	____
____	____	____	Uses Best Avenue of Approach	____	____	____
____	____	____	Exploits Trafficable Terrain	____	____	____
____	____	____	Uses Effects of Weather to Best Advantage or to Enemy Disadvantage	____	____	____
____	____	____	Achieves Concentration	____	____	____
____	____	____	Achieves Surprise	____	____	____
____	____	____	Achieves Speed	____	____	____
____	____	____	Flexible	____	____	____

Figure 2-6. Comparison Matrix for Offensive Operation.

The decision on the best course of action must be made logically because it forms the basis of the plan. Having compared all available courses, one course should stand out as the best choice.

After deciding on a single course of action, plan and execute that course until events or information (received) changes the estimate of the situation.

Then, begin refining the course of action into a plan that can be executed by the company. The tentative plan will serve as the basis of the OPORD. Use the OPORD format to make sure there is enough detail in the plan. One technique is to first establish maneuver graphics, then sequence each event (based on the war game), and portray this on the maneuver overlay.

Section IV. COMMAND AND CONTROL OF OPERATIONS

Once combat begins, it may be difficult or impossible to control combat operations. The frictions of war can inhibit an operation so much that it quickly fails. The planning process outlined in Section II is intended to cope with some of these problems before combat begins. This section provides techniques to help reduce confusion and execute the plan.

A commander must carefully select a position so the lead element or the most critical platoon can be seen. Use terrain and weather to conceal movements from the enemy, but maintain either visual or radio contact with the platoons. Use a navigator on the vehicle to maintain the current location on the ground.

Synchronize actions with the other company commanders. When something critical happens, send the battalion commander a quick situation report (SITREP). The XO can help by reporting to the task force on the operations/intelligence net (if there is one) or on the task force command net. If contact with the battalion is lost, take every step possible, short of abandoning the mission, to reestablish communications. Until communications are restored, continue to take actions that accomplish the battalion commander's intent best.

The XO can monitor the battalion frequency, make reports to the battalion on the tactical situation, and keep track of the locations and actions of adjacent and supporting units. When direct contact with one or more platoons is not possible, the XO may serve as a radio relay or be positioned so he can control those elements.

See the battlefield. Constantly probe for information about the enemy and the terrain. Be prepared to change and update the estimate of the situation at any time. Think ahead and identify potential threats and opportunities. When it becomes clear that the original concept will not work or a better alternative presents itself, modify the plan rapidly and aggressively to fit the changing situation.

Issue timely and clear FRAGOs. Tell the platoon leaders what the intent is, what their mission is, where to move, where to point their weapons, and when to shoot. Issue warning orders to give the platoons time to react to all possible upcoming missions. Keep subordinates posted on the enemy situation and what other units in the task force are doing.

Demand that subordinates maintain contact with you, and keep you informed of their situation. If you cannot communicate with subordinates you have lost control of the situation and failed in the primary mission on the battlefield. Sacrifice anything to maintain command and control of the unit. If the platoon leader is issuing instructions on his net, or is dismounted, make sure the platoon sergeant is monitoring the company command net. Drill subordinates in spot-report and SITREP procedures.

Encourage the platoon leaders to talk to each other and coordinate their actions. Use SOP drills and tactical techniques that are simple and can be cued by brief commands. Use checkpoints and terrain features to control maneuver to specific positions. Use TRPs, cardinal direction, and the clock system to orient fires.

Ensure all-around security so there is time and space to react. The SOP should specify vehicle and personnel responsibilities when moving. Establish OPs when stopped, even for a short time. Make sure the elements maintain good dispersion laterally and in-depth. Do not let the unit become fragmented after a rapid dash across an open area. Use dash speed over short stretches to maintain control and orientation of the movement.

Take measures to avoid fratricides. Enforce recognition signals during passage of lines, relief in place, and any situation where two different elements are collocated. Keep subordinates posted on friendly locations within the field of view. Fire only on positively identified enemy targets across boundaries and where friendly units are known or suspected to be located. During limited visibility, take special precautions, use visual signals that can be seen with the naked eye, and make sure the crews know how to recognize enemy vehicles through thermal sights.

SUCCESSION OF COMMAND

It is essential that personnel outlined in the succession of command thoroughly understand the intent and concept of the operation so, if the situation arises, they can take command of the unit and execute the mission successfully.

Explain the succession of command within the organization. Normally, the succession of command is governed by the company SOP but it may be realigned based on unit mission or personnel turbulence. Put the succession of command in paragraph 5 of the OPORD. An example of a succession of command would be:

- Commander.
- XO.
- 1st Platoon Leader.
- 2d Platoon Leader.
- 3d Platoon Leader.
- FSO.
- First Sergeant.

When giving the order give the location of each leader, if different from the company SOP. As a minimum, tell where you will locate and where the XO will locate. As stated in Section II, position yourself at the most critical location and the XO at the second most critical location.

COMMUNICATIONS

The communication (signal) means available to the company team will depend on the individual skills of the soldiers, the equipment, and the desires of the company team commander. Skill in communications depends greatly on the SOP and how well the unit is trained in that SOP. Different means of communication have different capabilities and limitations. Each should complement the other so the company does not rely on one particular mean. Dependence on one mean endangers command and control, while use of several means strengthens that control. This builds redundancy into the command and control system. The company has four basic means of communication: wire, messenger, sound and visual signals, and radio.

Use *wire* as the primary means of communication for OPs, fixed battle positions, strongpoints, combat trains, and assembly areas.

Dispatch *messengers* when the unit occupies an assembly area or battle position or consolidates on an objective. Move messengers from platoon vehicles to platoon, then platoon to company. For example,

individual soldiers are dispatched to the platoon sergeant's vehicle to report their status. The platoon leader dispatches a messenger to the commander's vehicle to receive any instructions on consolidating the platoon. The platoon sergeant dispatches a messenger to the XO's vehicle to report the status of the platoon. On consolidating the unit status, the XO dispatches a messenger to the first sergeant and personally reports the status to the commander. Messengers are slower and more vulnerable to hostile fire than other means of communication, but they are also the most secure method of communication. Messengers should rehearse routes (if possible), both in daylight and darkness, and should carry written messages to enhance accuracy. (The use of messengers should be covered in detail in the company SOP).

Include *sound and visual signals* in the battalion SOI or company SOP. Signals not included in the SOI may be established for use within the company, provided they are changed frequently to avoid being compromised and understood by all. Sound and visual signals include lights, flags, hand signals, pyrotechnics, and different types of noise (metal on metal, rifle shot, whistle, bell).

Radio is the primary means of communication when enemy contact is made. To avoid detection by enemy direction-finding equipment, the company must use all other means to communicate until it becomes absolutely necessary to use the radio. Brevity on the radio is the key in reducing EW signature.

The commander operates the company net and monitors the battalion net. The XO operates on the battalion command net and monitors the company net. The first sergeant operates on the battalion ALN and monitors the company net (if he has two-net capability). Platoon leaders operate on their net and monitor the company net. (See Figure 2-7.)

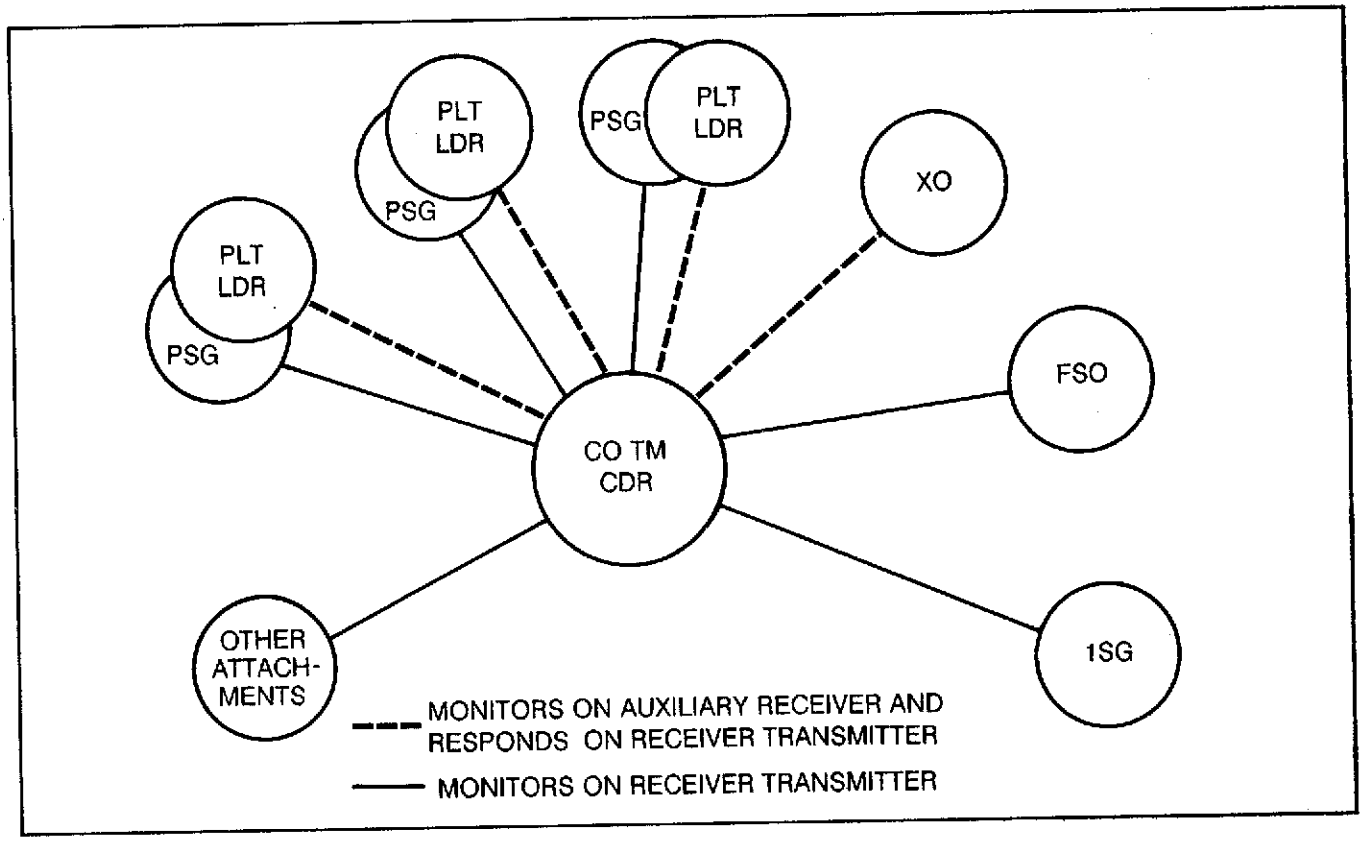


Figure 2-7. Company Team Command Radio Net.

Sometimes all stations can be on the same net, such as the company command net. This facilitates quick or simultaneous response, overcomes the temporary breakdown in command when key leaders are lost, and gives maximum control over the unit. Serious drawbacks include—

- More susceptibility to jamming and unintentional interference or override.
- Overloading the net, unless *everyone* practices strong net discipline.
- Difficulty reestablishing communications quickly on the platoon nets.

Depending on the training and discipline of the unit, this technique may be used during long road marches, while in assembly areas, while in a reserve position, or when consolidating survivors after a battle.

The XO must keep the commander informed yet avoid transmitting trivial data. He monitors the battalion command net and relays critical information received on that net as necessary. The XO coordinates or directs movement and support that the commander cannot control from his forward position. The XO basically frees the commander to fight the battle.

The eavesdrop system allows information passed over the command net to be used effectively. It is used on all nets from battalion down to platoon. This system requires certain stations to monitor message traffic on a given net, even if they are not the direct recipients of the message. Command net traffic is sent to or from the commander. The platoon leaders, XO, company FSO, and first sergeant will monitor the traffic and take appropriate action.

During the battle, lateral communications between platoon leaders and between commanders is critical. Platoon leaders must talk to each other throughout the battle to stay informed about what is happening on the battlefield. Each platoon leader tells the platoon leader on his flank or rear what the enemy is doing, what actions he is taking and what his plans are and provides recommendations to the other platoon leaders and the company commander. The company team commander monitors the lateral communications between platoons and knows exactly what is happening in his area. The commander gives orders based on the tactical situation. All platoon leaders monitor the command net and transmit critical information.

To maintain effective radio communications—

- Keep radio transmission time short (10 seconds). When a long report must be submitted by radio, use the word break to break the message into smaller segments.
- Make clear, concise transmissions.
- When direct radio contact is broken, set up relays; if this fails, go to high ground to reestablish contact.
- Submit initial enemy contact reports immediately. Send more complete information later.
- Police the net. Transmissions should be prioritized. A suggested priority list is—

  –Initial contact with the enemy.

  –Major changes in the situation.

  –Fire coordination (lifting fires, shifting direct fire, adjusting artillery, artillery target effect).

  –NBC-1 report.

  –Full spot reports.

  –Shelling reports (SHELREP).

–Obstacle reports (such as bridge classifications).

–Logistical reports (may receive a higher priority during the late stages of an engagement).

Be prepared for the unexpected. React quickly when communications fail. Training, SOPs, and tactical techniques become critical in the absence of electronic communications. The most clear and concise order that can be given is, "Follow me, do as I do."

Communication Responsibilities

All levels of command must gain and maintain communications with the appropriate headquarters and personnel. Traditional communication responsibilities are–

- Senior unit establishes communications with a subordinate unit. An attached unit is subordinate to the command to which it is attached.
- Supporting unit establishes communications with the supported unit.
- Reinforcing unit establishes communications with the reinforced unit.
- The next higher commander or the SOP tells how communications will be established between adjacent units. If responsibility is not stated in the orders, the commander or leader on the left will establish communications with the unit on the right (left to right). The commander of a unit positioned behind another unit establishes communications with the forward unit (rear to front).
- Regardless of the responsibility, all units take prompt action to restore lost communications.

Communications Security and Discipline

Communications security (COMSEC) denies or delays unauthorized persons from gaining information of value from telecommunications and effectively interrupting communications. The company team commander achieves COMSEC by enforcing authentication procedures to make sure only authorized stations are on the net and by restricting the use of radio transmitters.

Restrict radio transmitters to administrative use only when out of enemy contact. Normally, all radios other than the commander's and subordinate leader's should be on radio-listening silence. Silence will only be broken on enemy contact or when orders need to be passed. Establish conditions under which radio restrictions may be broken. Make sure these conditions are clearly understood by all operators. SOPs or orders must reflect–

- Use of wire or messenger whenever possible.
- Reduced transmission times.
- Net discipline strictly enforced by each subordinate leader.
- Antennas sited with a terrain feature between them and the enemy.

Antijamming and Direction Finding

Antijamming procedures used by radio operators include: recognition, continued operations, reporting, use of low power, antenna masking, frequent authentication, and actions on effective jamming.

- *Recognition.* Operators attempt to identify the cause of interference. Do not automatically assume the enemy is employing jamming techniques. Symptoms are often similar to other types of radio

interference. Remove the receiver antenna to determine whether a signal is being generated internally by the receiver. If the interference decreases with the antenna removed, the interference is external and the problem may be enemy jamming.

- *Continued operations.* Continue normal radio operations after jamming has been identified. This may mislead the enemy about the effectiveness of jamming. Continue normal operations until orders are received to clear the net.
- *Reporting.* All operators must report jamming to higher headquarters. Send this report by another means of communications, such as wire, messenger, or secure FM radio.
- *Use of low power.* Low-power transmission reduces the chance that the enemy will detect the signal. If the signal cannot be heard, the transmitter cannot be located by radio direction-finding equipment.
- *Antenna masking.* An easy way to defeat radio direction finding is to hide radio signals behind terrain. Radio waves bend and are reflected by buildings and mountains. When this happens, it is difficult to determine the origin of the wave, but the strength of the signal is affected very little. Keep radio antennas as low as possible and still maintain adequate communications with subordinate, higher, and adjacent units.
- *Frequent authentication.* Make sure radio operators and leaders are aware of imitative communication deception (ICD). The enemy frequently uses ICD to prolong communications. Encourage operators to recognize the voices of the frequent operators. Use secure radio equipment to help alleviate ICD. If suspicious stations enter the net, immediate authentications should be required.
- *Actions on effective jamming.* The unit SOP establishes the procedure to follow on effective jamming of a company net. The company team commander or, in his absence, the XO will make the decision to switch to another net. When changing frequencies, try to leave one radio temporarily on the old frequency to police the net of any station that missed the code word to change frequencies. Beware of attempts to solicit the new frequency by unidentified stations in the old net. Report frequency changes to higher headquarters as soon as possible along with the meaconing, intrusion, jamming, and interference report (MIJIFEEDER).

READINESS CONDITION

The readiness condition (REDCON) status is a standardized way to adjust the unit's posture to move and fight. These levels of readiness allow quick responses to changing situations and completion of necessary tasks such as security, rest, feeding, and defensive preparations while stationary.

REDCON 1: Full alert, ready to move and fight.

–All personnel alert and prepared for action.

–Vehicles loaded and secured, and weapons manned.

–Platoons ready to move on notification.

–Engines started.

REDCON 2: Stand to complete, ready to fight.

–Precombat checks complete.

–Equipment stowed (except for wire, NBC alarms, and communications gear).

–Vehicles and weapons manned.

–Vehicles started together on order from company team commander (over hot loop).

–Prepared to move or fight in position, infantry is dismounted in fighting positions.

–Status reports submitted to company team CP.

–Vehicles ready to move in 15 minutes, if Class IV (mines, concertina, overhead cover, sand bags) are abandoned.

REDCON 3: Reduced alert.

–Fifty percent of each crew, squad stand down for feeding, rest, and maintenance.

–Remaining personnel man vehicles and OPs (including air guards, weapons) prepare positions and obstacles, and monitor radios and phones.

–Vehicles ready to move within 30 minutes of notification. Most Class IV can be recovered.

REDCON 4: Minimum alert.

–OPs manned and one man alert per platoon, monitor radios and man turret weapons.

–Vehicles ready to move in one hour. All Class IV not permanently emplaced can be recovered.

MANEUVER CONTROL

SOPs, Battle Drills, and Doctrinal Formations

Unit SOPs, tactical techniques, and doctrinal formations simplify control of maneuver. These documents establish standardized procedures, actions, and techniques for tactical operations.

SOPs standardize report procedures, formation and movement techniques, command and control, logistics, and administrative operations. Normally, SOPs only address recurring situations and operations. Generic SOPs can be used as base documents for the SOP.

Battle drills are standardized actions taken by crews, squads, and platoons. (Details on battle drills can be found in FM 17-15.)

Use doctrinal formations and movement techniques to establish tank positions, movement patterns such as bounding, and responsibilities within platoons and companies. See FM 7-7J, FM 17-15, and Chapter 3 for detailed information on formations and movement techniques.

Vehicle Recognition System

Develop a system for friendly vehicle recognition in accordance with the battalion task force SOP. This system must be functional on the nonlinear, obscured battlefield during periods of daylight and limited visibility. Visual and thermal recognition systems will assist in command and control and fire distribution during the haze and confusion on the battlefield. Vehicle marking systems have limited success of preventing fratricide. The best way to prevent fratricide is rehearsal and supervision of movement, clear

understanding of the plans and orders, and control of direct-fire weapons. Once the battle begins, vehicles moving at random around the battlefield are at great risk unless positively identified as friendly.

FIRE CONTROL

Controlling and coordinating fires is just as vital to success of the operation as controlling and coordinating movement. Direct fire in the right amounts at the right times to achieve the desired results. The results desired can be summed up in three words: destroy, neutralize, and suppress.

Destroying a target means putting it permanently out of action. To destroy a weapon system such as a tank or a machine gun, eliminate its main armament and mobility. It is not necessary to kill all the soldiers in a unit to destroy it. Inflicting 30 percent or more casualties on an enemy unit in a short period of time can render it permanently ineffective. This, however, depends on the type of unit, their morale, and how much protection they have available.

Neutralizing a target puts the target out of the battle temporarily. It will become effective again when casualties are replaced and the damage is repaired.

Suppressing a target prevents it from placing effective fire on friendly forces. The effect of suppressive fires usually lasts only as long as the fires are continued.

Principles of Fire Distribution

There are two types of targets: point targets and area targets. A point target requires fires to converge on a particular target and achieve concentration of fire (see Figure 2-8). Point targets are normally designated by shifting from TRPs.

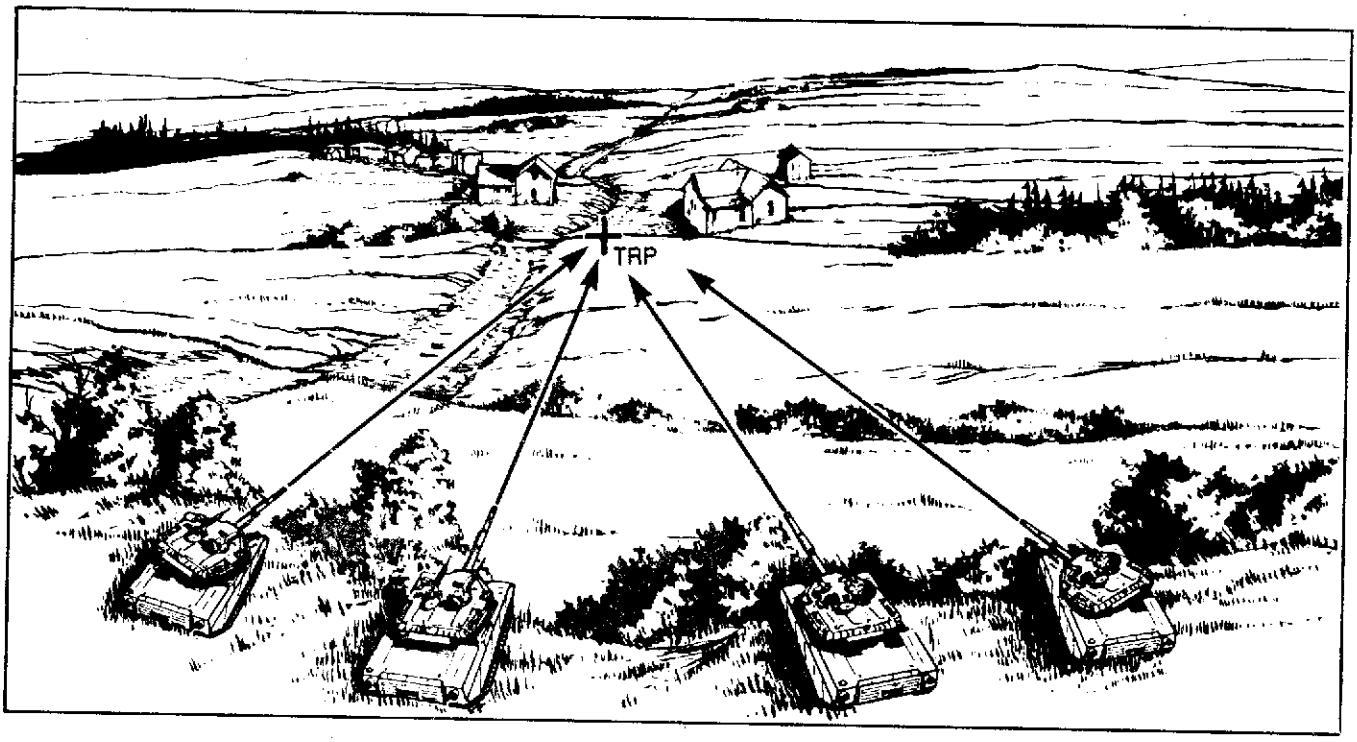


Figure 2-8. Point Target.

Area targets require fire distribution laterally and in-depth. The wider the area, the less concentrated the fires become (see Figure 2-9). Area targets are designated by EAs and sectors of fire established by TRPs.

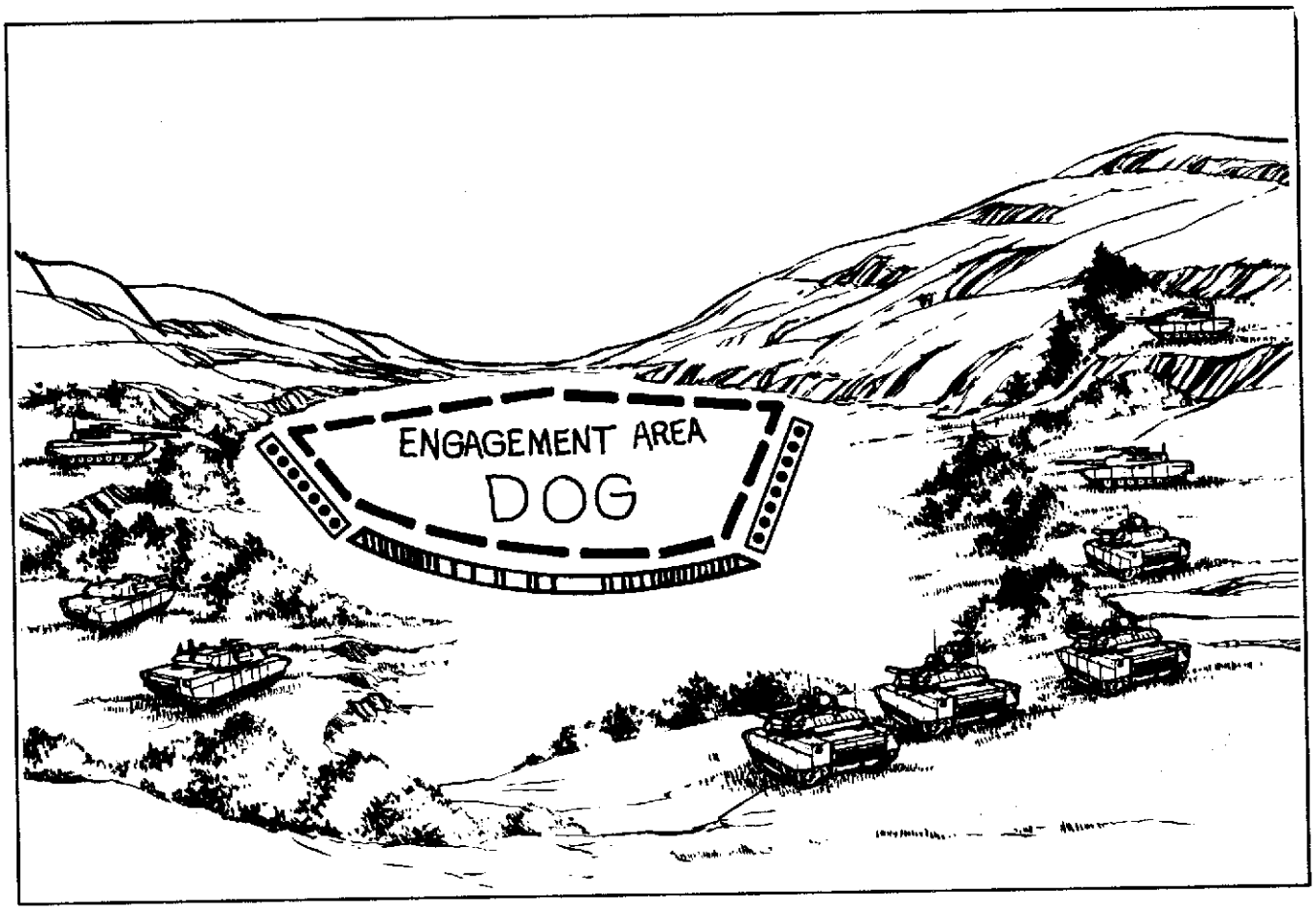


Figure 2-9. Area Target.

When controlling fires on point or area targets, consider—

- Shooting at the enemy first, before he can return fire or move to cover.
- Where friendly troops are located (shift when they are exposed).
- Using each weapon in its best role.
- Covering an area target completely with fire, while avoiding target overkill.
- Massing fires on point targets to destroy and neutralize.
- Destroying the most dangerous target first, when in doubt.
- Destroying the enemy one piece at a time by suppressing and destroying various portions of his unit.

Techniques for Controlling Fires

Graphic control measures are used to establish areas of responsibility, points of reference, and actual targets.

Designate sectors of fire for each platoon in the company. In turn, the platoon leaders will designate sectors of fire for each individual tank, BFV, and squad. Sectors of fire at all levels are generally given using TRPs. (The 1st platoon's primary sector of fire is from TRP 104 to TRP 106.) Overlap sectors of fire to provide mutual support between positions and weapon systems. Use distinct terrain features, the clock system, or limiting stakes to designate sectors of fire. (See Figure 2-10.)

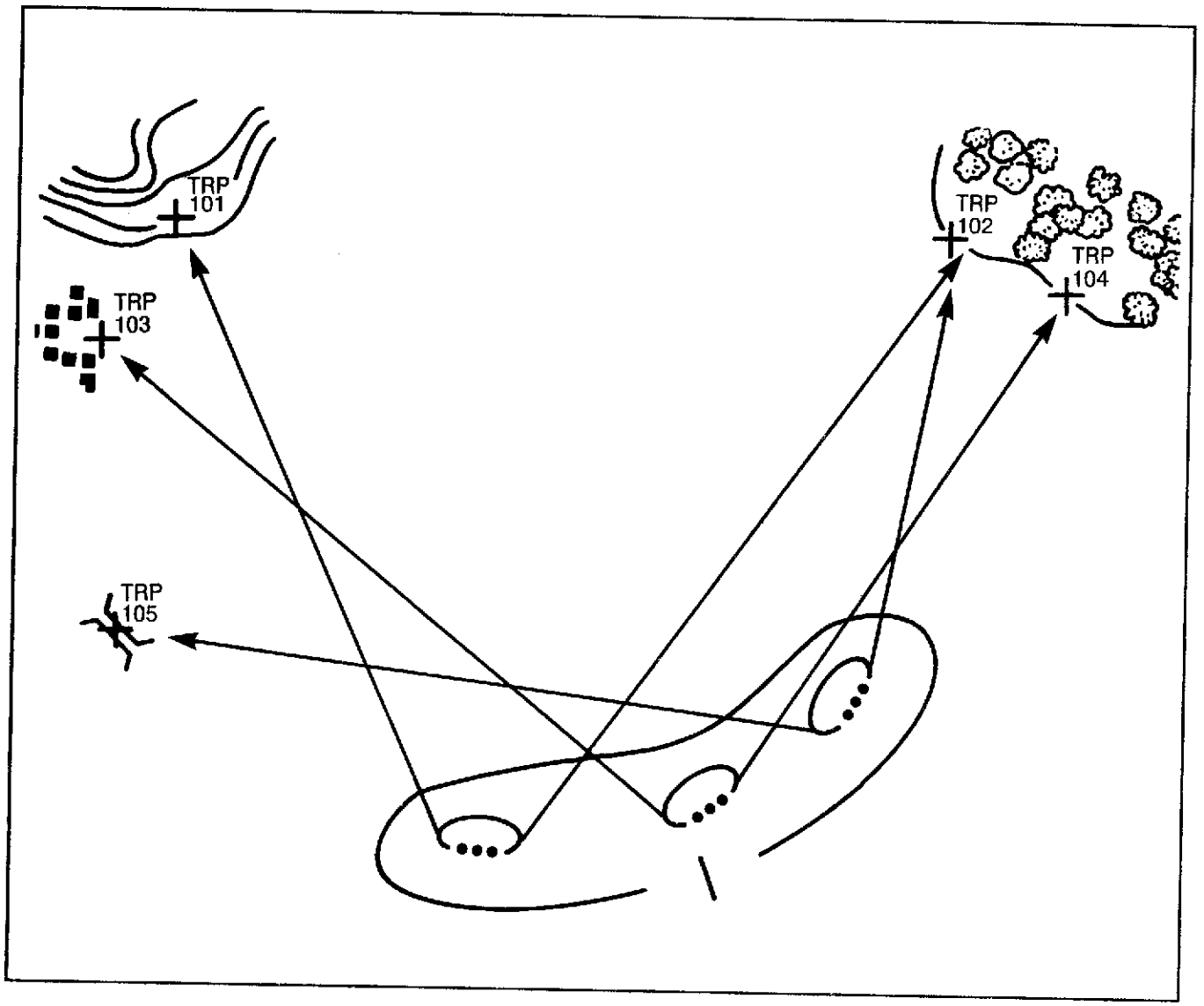


Figure 2-10. Platoon Sectors of Fire.

Near half/far half is a technique used when the terrain is so open there are no specific features to use as reference points. Platoons are assigned specific portions of the EA. (The 1st platoon is responsible for the near half [the area closest to friendly forces], 2d platoon is responsible for the far half [the area farther from the friendly forces]). (See Figure 2-11.)

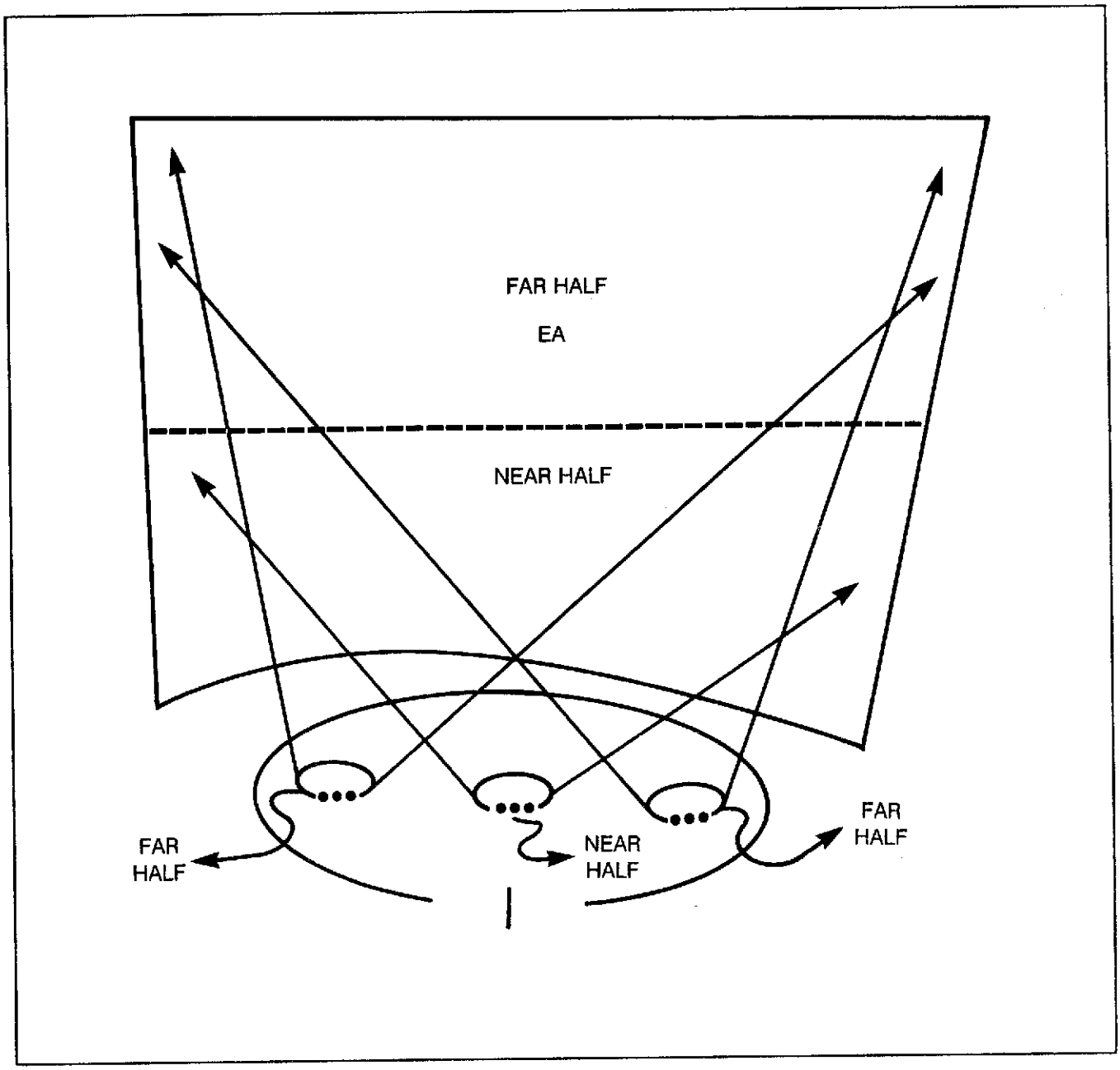


Figure 2-11. Near Half/Far Half Technique.

Engagement Priorities

Tanks, BMPs, BRDMs, and other vehicles may all appear in an armor formation. Each of these systems has different capabilities and pose a different type or level of threat at different ranges. Determine which targets are most dangerous and assign engagement priorities. Assign engagement priorities according to the mission. Generally, BFVs should engage BMPs, ZSUs, and other light-armor vehicles. Tanks engage tanks. TOW missiles engage command and control, engineer, and ADA vehicles. This rule should not restrict assignment of priorities. Decide which engagement priorities are needed for each situation. Different engagement priorities may be assigned to different platoons. (The 1st platoon engages BMPs then tanks, 2d platoon engages ZSU 23-4s then BMPs, and 3d Platoon engages tanks then BMPs.)

There are several ways to initiate the fires of the unit. The most common methods are—

- *Event method.* This is used when an enemy force crosses a particular point on the ground (PL).
- *On command.* This is used to initiate fire. The radio is normally used, however, an alternate means of communications must be set up to make sure all platoons receive the message, such as green star cluster.
- *Time.* This can be used to initiate direct-fire weapons, however, it is most commonly used with artillery to destroy known or suspected enemy locations.

Commands can be used to control fires as well as initiate them. Fire commands are given based on the following format and example:

Alert	C8Q (net call sign)
Weapon/Ammunition (optional)	2 ROUNDS SABOT
Description	10 BMPs, 2 T80s
Location	TRP 104
Control/Pattern, Technique (optional)	FRONTAL
Execution	ON MY COMMAND—FIRE

Direct fires may be controlled by platoon or by company. To control by platoon, state which platoon the fire command is for (1st platoon).

The three patterns of fire are: frontal, depth, and cross. The three techniques of engagement are: simultaneous, alternating, and observed. (See FM 17-15 for detailed information on firing patterns and techniques.)

Fire commands are mainly used at platoon level for control. When they are used at company level, allow time for the platoon leaders to relay commands to their subordinates, or put all firing vehicles on the same radio frequency. This technique is useful in planning an ambush. Fire commands are best used to achieve massed fires, target destruction, and surprise from a defensive position. Surprise is achieved best by using the simultaneous technique. Several techniques may be used to transition during a battle. (Begin with a single simultaneous engagement to achieve shock and surprise; follow with alternating fire to destroy the enemy targets, and finally, return to simultaneous fire to break off an engagement or react to an enemy assault.)

Engagement may be ordered at different times for different weapon systems. For mass surprise fire, order all systems to engage at certain times so all rounds hit the target at the same time. The FSO can provide information on time of flight of indirect fires. Use time-of-flight information to place all effective fire on the enemy at one time. Initiate the engagement with TOW missiles and tank main-gun fires followed by artillery so direct-fire weapons can engage unobscured by dust and smoke.

Indirect fires must be lifted and shifted in order to achieve maximum suppression and enemy destruction and protect friendly forces. Indirect fires may be executed on a prearranged time schedule or may be lifted and shifted on command. Lifting and shifting fires on command requires *planning time* to relay the transmission to friendly artillery batteries and *time* for friendly or enemy forces to move into or away from those fires.

Restricting weapons may help ensure only *positively identified* enemy are engaged. It is used most often in restrictive terrain, limited visibility operations, during linkup (or relief) operations, or when friendly units are fighting on separate converging axis. The best technique is the use of restrictive fire control graphics such as restricted fire lines.

OPERATIONS SECURITY

To win, deny the enemy information about actions and intentions. The OPSEC measures taken to accomplish this goal fall into three categories:

- Countersurveillance – measures taken to protect the true status of friendly activities and operations. It includes –
  - –Signal security – discussed in the preceding section on communications.
  - –Physical security – physical protection of equipment, materials, installations, and activities. Use both active and passive measures to achieve physical security. Security forces, barriers, and anti-intrusion devices are used to establish physical security. Passive measures include camouflage, concealment, pattern painting, and noise and light discipline.
  - –Information security – the protection of information (classified and unclassified) that may be of value to the enemy.
- Countermeasures – measures taken to eliminate or reduce the enemy intelligence and EW threat to US Army activities.
- Deception – measures taken to create an appearance of friendly activities and operations.

Safeguard weapons, ammunition, classified documents, and sensitive items at all times. When not in use, sensitive items should be stored out of sight. Careless equipment security can lead to compromise of the unit's capabilities. For example, if the company team moves through a seemingly secure town with limited visibility devices and ammunition on display, enemy infiltrators or sympathizers may obtain information about unit capabilities.

Do not allow foreign nationals and observers in or near the unit's area or positions during combat operations. Establish procedures (in accordance with higher command's policy and the law of war) for handling civilian intruders.

Brief the soldiers on what not to include in their mail. Mail can be a valuable intelligence source. Items that should not be in letters are:

- Unit identification, size, location, or capabilities.

- Knowledge of future operations.
- Specific mention of commander's names.
- Acknowledgment of heavy losses or poor morale.

Thoroughly police areas before leaving to make sure items of intelligence value are not left behind. Police as you go to avoid possible compromise.

Use countermeasures to overcome specific enemy intelligence operations. When an area vulnerable to surveillance is found, develop a countermeasure to prevent the enemy from exploiting that vulnerability. Such countermeasures may include deception to mislead the enemy. Deceptive operations include—

- Ruse.
- Display.
- Feint.
- Demonstration.

Most deceptive operations are planned and directed at levels above battalion. However, deception may be needed as part of the scheme of maneuver to deceive the enemy or cause it to react a certain way. Obtain approval from battalion before initiating deceptive operations. Some deceptive operations may include—

- Visual techniques—showing actual or dummy movement, equipment, or activity at a believable time in a believable place.
- Sound—engines running, track noise, hatch closing, digging, and gunfire.
- Odor—diesel fumes and cooking odors.
- Electronic techniques—false transmissions and remote locations for radios.

Active Security Measures

Security measures designed to protect against surprise, observation, and infiltration are planned at both battalion and company level. The battalion S2 will help the S3 plan security, surveillance, reconnaissance, and counterreconnaissance measures. Make sure security measures support and complement the battalion plan and meet security needs.

Use a combination of OPs, patrols, sensors (such as platoon early warning system), and night observation systems to provide early warning. Use ambushes and reaction forces to destroy enemy reconnaissance forces. (See Chapter 7 and Appendix N, FM 7-7J for further information.)

Stand To

Stand to is a period of maximum preparedness at first light in the morning and at darkness in the evening. Stand to ensures that everyone is ready for action and adjusts to the changing light conditions. As a minimum, conduct stand to from 30 minutes before until 30 minutes after beginning morning nautical twilight (BMNT) and again at end evening nautical twilight (EENT).

The unit SOP should specify the actions to be taken; as a minimum, the unit should come to REDCON 2 (see "Readiness Condition").

Vehicle Camouflage

Use camouflage to break the outline of a vehicle. Natural vegetation works best. Tree branches placed on vehicles will break the outline and hide distinctive features such as cupolas and tank guns. Camouflage must look natural. If the area vegetation is green, camouflage must be replaced often.

Use camouflage nets to hide vehicles in stationary positions especially from aerial observation. Avoid geometric patterns. Park vehicles to take advantage of natural concealment and shadows when possible.

Pattern paint vehicles with drab paint to reduce glare. (See FM 5-20 for instructions on pattern-painting vehicles.) Remove or tie down and cover windshields. Cover mirrors and headlights.

Dust and exhaust smoke destroys concealment afforded by camouflage. Consider the effects of dust and smoke when selecting positions. Enforce proper maintenance and driving. Minimize track, tire, and foot trails that could be detected from the air or from enemy positions. In snow or sand, cover up track patterns if possible (often, the wind will take care of this). Disperse the vehicles and personnel to lessen the chance of aerial observation and detection by sensitive heat-seeking devices. Make sure vehicles do not give thermal signatures from their hide positions.

Light and Noise Discipline

Strict light and noise discipline must be enforced. Even filtered flashlights and burning cigarettes can be seen for great distances, particularly with night-vision devices. Shield lights needed for essential maintenance and other activities from enemy view.

Soldiers must talk and move only when necessary. At night, it is particularly important to talk in low voices and move slowly to avoid unnecessary noise. To reduce the noise of armored vehicles—

- Do not slam hatches and doors.
- Start and move vehicles only as part of a plan or tactical operation.
- Start vehicles at the same time to keep enemy observers from pinpointing the type and number of vehicles started.
- Perform maintenance and resupply in areas that are masked by terrain to shield noise, preferably during daylight in covered, concealed locations.
- Sandbag and shield generators to reduce noise.
- Monitor radios from combat vehicle crewman (CVC) helmets, not from speakers. Keep radio volume as low as possible.

Challenge and Password

Strictly enforce proper challenge and password using the current SOI.

CHAPTER 3

OFFENSIVE OPERATIONS

Frederick the Great said in his *Instructions for His Generals,* "I approve of all methods of attacking provided they are directed at the point where the enemy's army is weakest and where the terrain favors them the least."

Section I. BASIC CONCEPTS AND MISSIONS

BASIC CONCEPTS

The company team participates in five major types of offensive operations: movement to contact, hasty attack, deliberate attack, exploitation, and pursuit. The company team may conduct hasty attacks, deliberate attacks, and movements to contact independently; however, it normally participates in all types of operations as part of a larger force. Company teams will perform hasty attacks, deliberate attacks, or movements to contact as part of a larger unit's exploitation or pursuit operations.

The company team will also participate in special-purpose operations. These operations include: reconnaissance in force, attacks from a defensive posture (spoiling attacks and counterattacks), diversionary

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operations (feints and demonstrations), and raids. (See Chapter 3, FM 71-2 for further discussion on these operations.)

CHARACTERISTICS OF OFFENSIVE OPERATIONS

The fundamental characteristics of offensive operations are concentration, surprise, speed, flexibility, and audacity.

Concentration

Concentration of effort is critical to the attacker's success. To achieve concentration, all firepower and shock action must be used at a decisive place and time to destroy the enemy. Ideally in the attack, this concentration of firepower and shock action occurs at the enemy's weakest point.

Surprise

In the offense, initiative gives the commander the flexibility to choose the time, place, and method of attack to strike the enemy at an unexpected time and place. Avoid the obvious and strike the enemy at its weakest point to achieve success through surprise.

Speed

Speed promotes surprise, keeps the enemy off balance, contributes to the security of the attacking force, and degrades the enemy's countermeasures that cannot keep pace. Speed helps to maintain the momentum of the attack. Build speed into the operation through careful planning.

Flexibility

While detailed planning of the attack is essential, subordinate leaders should not be stifled from taking advantage of battlefield opportunities as they occur. It is important that subordinates understand their commander's intent as they exercise the initiative. Uncertainties on the battlefield, such as failure in communications, must be expected, and you must have the flexibility to adjust the operation accordingly.

Audacity

Audacity is the bold courage to exercise good judgment and take decisive action in a fast-paced, constantly-changing situation.

The tank and mechanized company team normally attacks as part of a closely-synchronized battalion task force. The company team may be used to overwatch, maneuver, or be in reserve. (See Figure 3-1.) In a fast-moving situation, it may conduct its own attack against an unprepared, moving, or weak enemy force. An attack may be hasty (little time to plan, reconnoiter, coordinate, or prepare) or deliberate (time for preparations). The attack may be under full or limited visibility conditions. Whatever the case, the tactics and techniques described in this section apply.

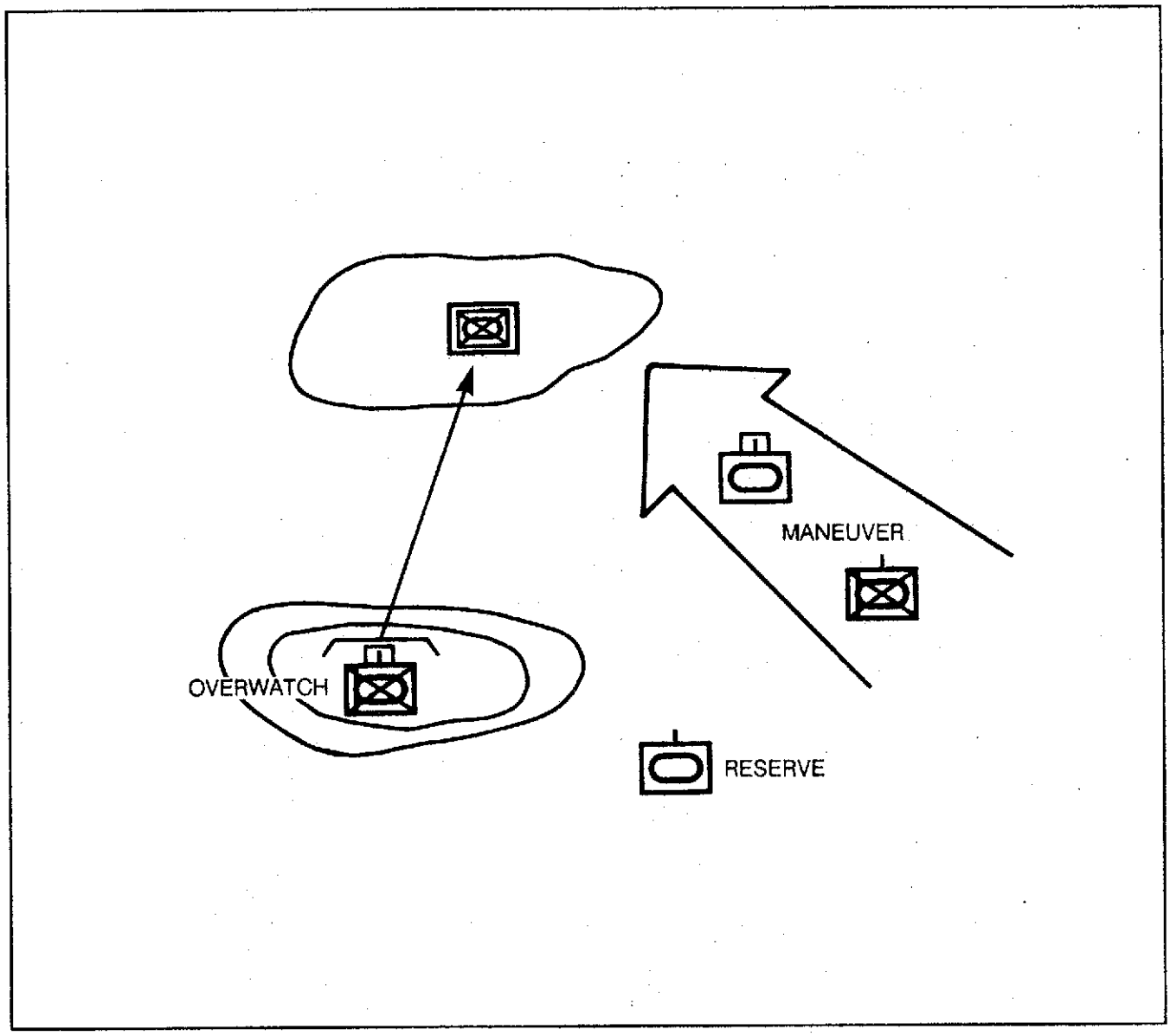


Figure 3-1. Basic Offensive Functions.

All tank and BFV forces attack in a synchronized effort of firepower and maneuver. (See Figure 3-2.) Tanks, ITVs, BFVs, and dismounted infantry are maneuvered to positions of advantage to destroy the enemy. The firepower of these forces are used in conjunction with supporting artillery, mortar, and close-air-support fires to isolate, suppress, and destroy the enemy forces. When fires are massed, superiority over the enemy will facilitate the maneuver. Maneuvering brings the assaulting forces into new, more advantageous positions to defeat the enemy.

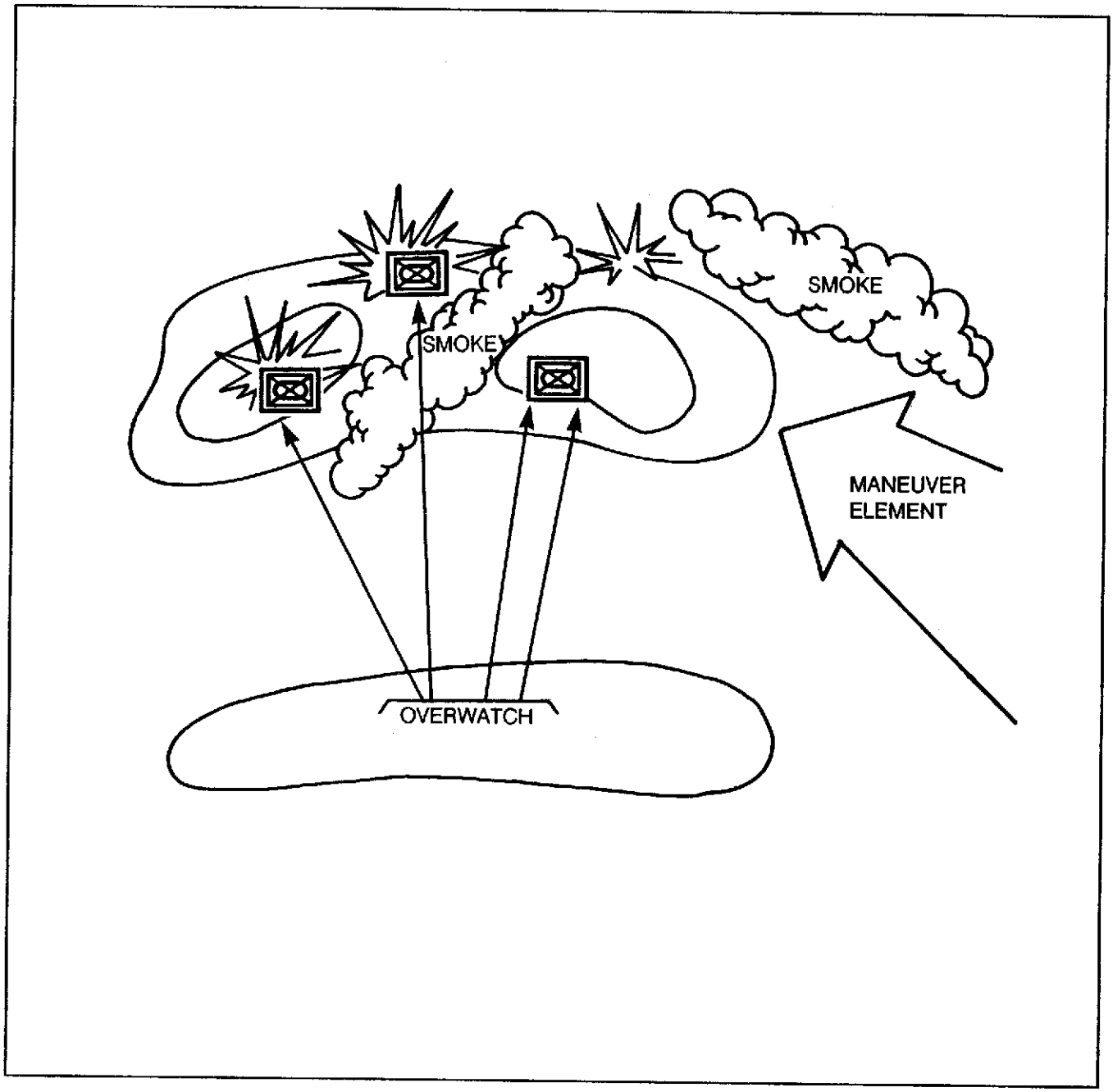


Figure 3-2. Fire and Maneuver.

(See Chapter 2 for offensive planning considerations. See Chapter 6 for information about planning combat multipliers [fire support, engineers]).

Section II. THREAT DEFENSIVE TACTICS

Sun Tzu said in *The Art of War*, "Know the enemy and know yourself; in a hundred battles you will never be in peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant both of your enemy and yourself, you are certain in every battle to be in peril."

Learn all you can about the enemy's intentions, capabilities, and tactics before planning or conducting an operation. It is, after all, Threat actions that cause you to react in a given situation.

Threat defensive postures are based on the following fundamentals:

- Hold at all cost. A first-echelon regiment or below is required to stubbornly defend its position even if bypassed.
- Destroy tanks. Threat doctrine stresses that the destruction of our tanks will cause an attack to collapse; therefore, antitank weapons are given first priority in positioning.
- Use obstacles and firepower. Threat doctrine emphasizes maximum use of terrain to strengthen its defenses. It wants to canalize you into fire sacks where the massed fire power of tanks, antiarmor weapons, and artillery can be used to destroy you.
- Retain reserves. Mobile antiarmor reserves are retained in the second echelon to block penetrations. At battalion level and above, tank reserves are retained to conduct counterattacks.

THREAT DEFENSIVE DEPLOYMENT

The Threat recognizes two types of defense: the prepared defense when the advance is going to be halted for more than a few hours, and the hasty defense used most often by first-echelon units in offensive action when its advance has been stopped. The major differences between the two types are the size of sectors, number of engineer assets, and location of tanks.

Prepared Defense

The first Threat forces encountered will be the security echelon. It reports your movement, attempts to canalize your approach, and strips away your reconnaissance. The security echelon may include reconnaissance vehicles, infantry carriers, dismounted elements, and, on rare occasions, tanks. Once you have fought through the security echelon, you will encounter the main defense zone. Figure 3-3 illustrates one example of what you might find. The motorized rifle battalion (MRB) could also defend with two companies forward and one farther back.

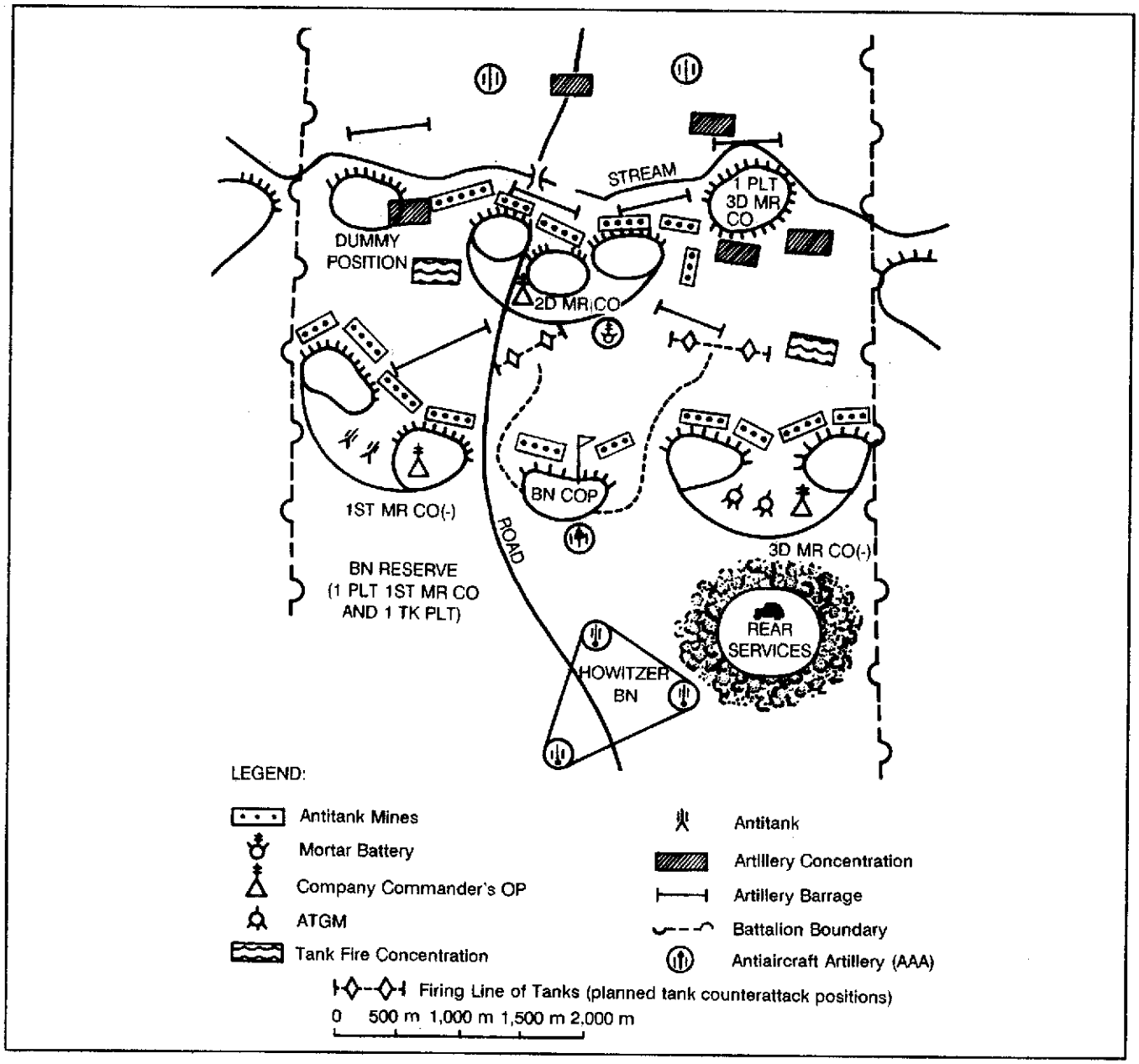


Figure 3-3. The Motorized Rifle Battalion in the Deliberate Defense.

Based on METT-T, the Threat battalion is usually assigned a frontage of 3,000 to 5,000 meters and a depth of approximately 2,000 meters. The defense area is organized in a single echelon. The companies are deployed in platoon strongpoints on armor restrictive terrain.

In addition to the battalion's organic weapons, first-echelon battalions are normally reinforced with a tank company and ADA elements from the regiment. Regimental antitank reserves occupy assembly areas

near the regimental CP with up to four deployment areas prepared for occupation. The areas between strongpoints are not really gaps but fire sacks. These sacks are preplanned in front of and within the battle area and are covered by flanking antiarmor fires, if possible. Fire sacks are kill zones for armored formations. To maximize fires into these pockets, each antitank weapon has an assigned primary and secondary sector of fire. In addition, Threat commanders at all levels make extensive preparations and plan to maneuver antitank weapons to maximize fires against any penetrations. Mines and obstacles are used to canalize you into its kill zones, to slow you down once in them, and to protect strongpoints. Areas that cannot be covered by direct fires are covered by outposts and patrols. Figure 3-4 depicts the Threat forward companies.

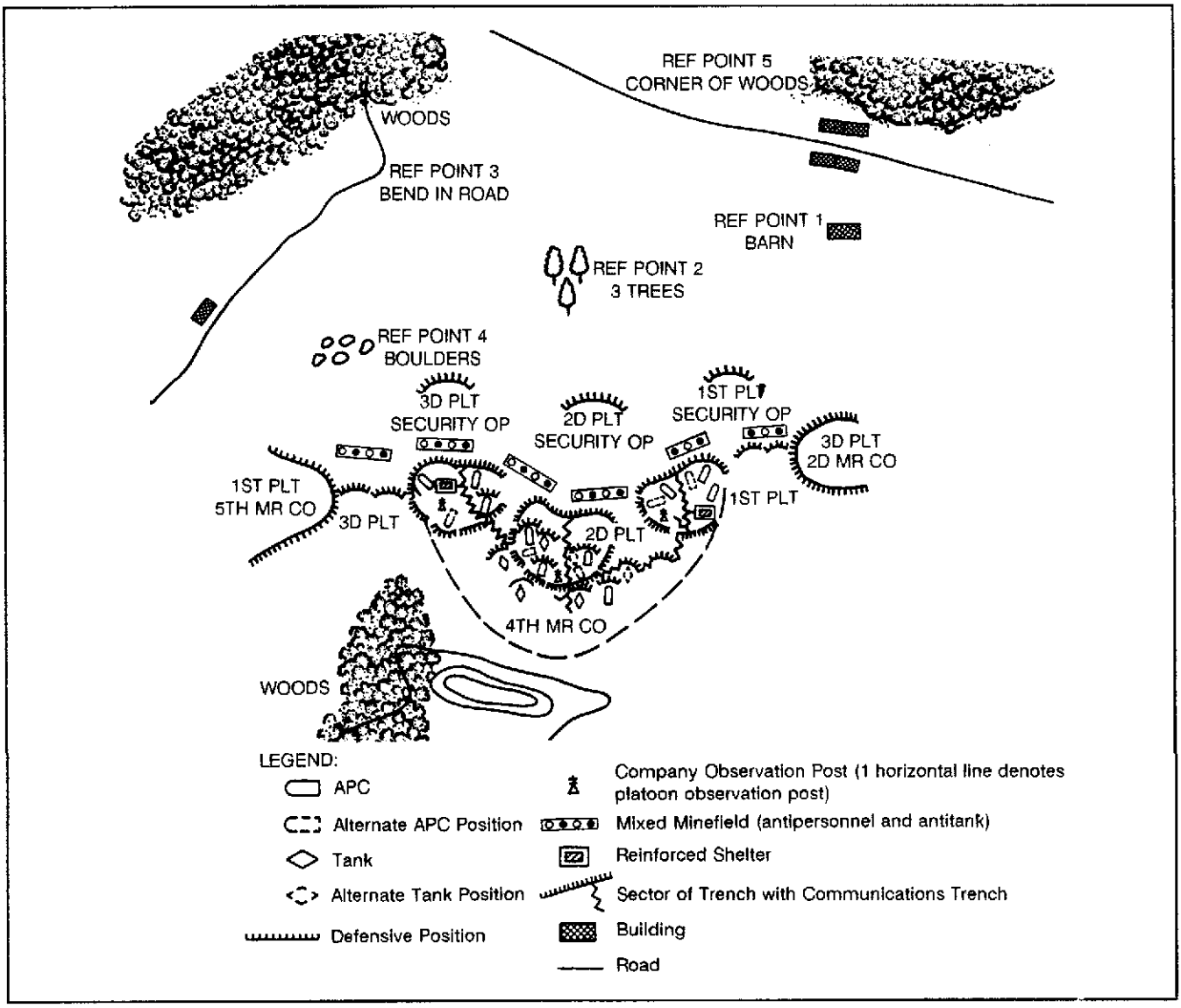


Figure 3-4. The Motorized Rifle Company Strongpoint.

In some instances, the BMPs of the forward platoons will be positioned with the rear platoon to provide overwatch fires. (Note the extensive trenches shown in Figure 3-5.) All infantry are dug-in as well as time permits. Communication trenches are dug laterally between platoons and to the company headquarters. Alternate positions are prepared. Both tanks and BMPs will be dug-in. A company occupies a position approximately 500 meters wide by 250 meters deep. Platoons are broken down into squad strongpoints with up to 100 meters between squads.

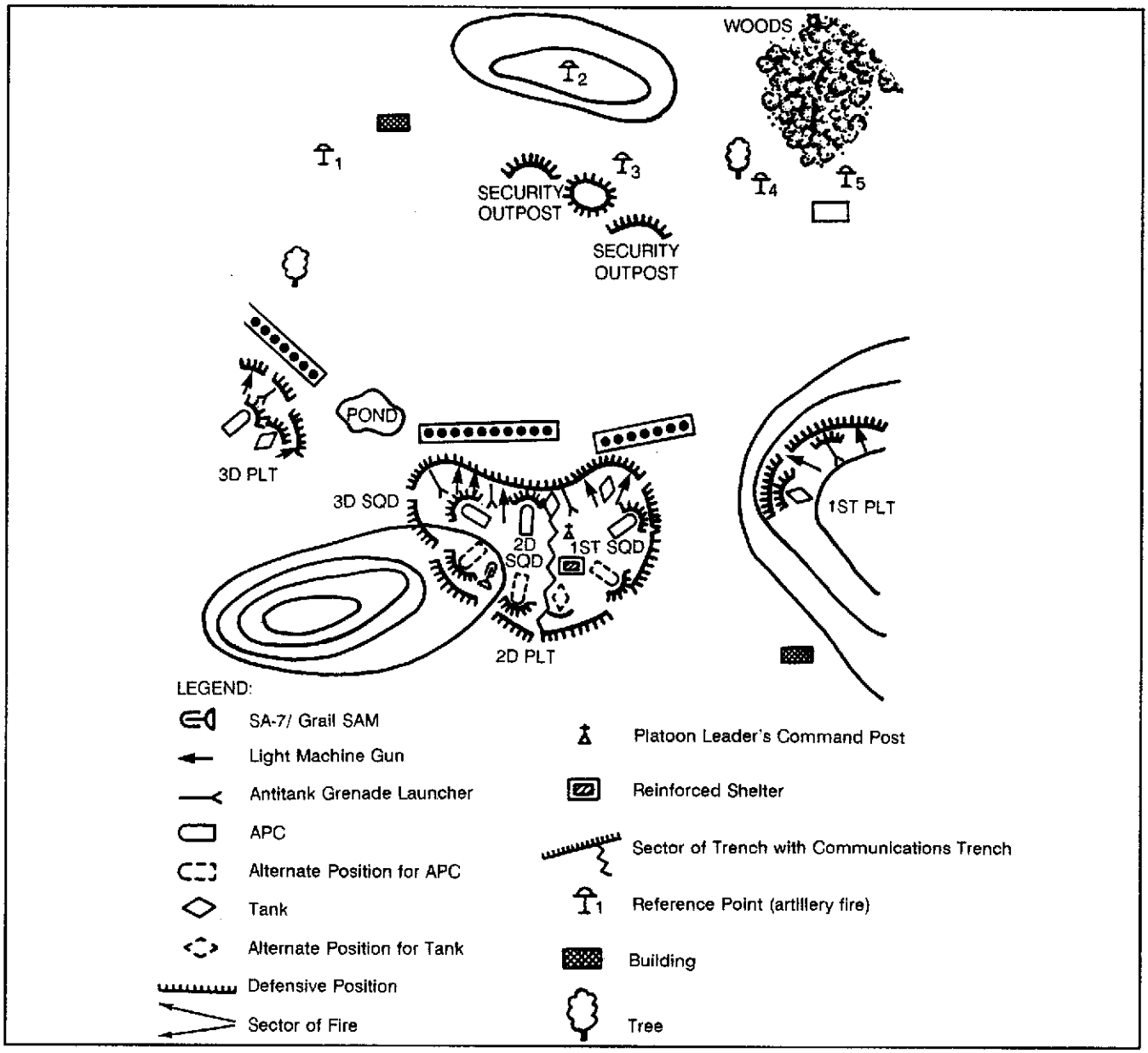


Figure 3-5. The Platoon Defensive Position.

Hasty Defense

There are differences between the deliberate and hasty defense. In the hasty defense—

- The width of the front is smaller (3 kilometers instead of 5 kilometers for a motorized battalion) with smaller gaps between positions.
- Tanks are located farther back in defensive positions because there is not enough time to dig in.
- There is less use of trenches, obstacles, and mines.
- Simpler fire plans are prepared for both antiarmor and artillery fires.
- The security zone does not extend as far forward and is not as strong.

These differences are in degree rather than design. For example, individual positions will be prepared and hasty obstacles and mines emplaced and improved as time and situation permit. It follows that the longer a unit is in a hasty defensive position, the more that defense will resemble a deliberate defense.

THREAT DEFENSE

Prior to Attack

Threat forces will fire an intense counterbattery of fires to preempt and, if possible, neutralize our artillery preparations. Potential assembly areas will be targeted. Troops in defensive positions will occupy shelters to protect against nuclear, chemical, and conventional fire. Radio-listening silence is maintained throughout this phase.

During Attack

As soon as the attack is launched, fire from all the enemy's available weapons will be launched against you. Its first-echelon battalions will *not* withdraw even if bypassed or surrounded. Threat forces are taught to establish a 360-degree defense. As penetrations are made, the second echelon and reserve may deploy to counterattack or may move to block penetration from alternate positions.

Our thrusts will be attacked in the flanks by tank and antitank reserves. Hasty minefields may be laid to contain the penetration. Chemical and nuclear strikes may be used against dangerous thrusts. Illumination will be used as necessary to support night operations.

Counterattack

Counterattacks are planned at every level. Counterattacks require the authority of the next superior commander before they can be launched. Counterattacks will generally be launched from a flank, often using a switch position as a deployment line.

THREAT WITHDRAWAL

Threat commanders will withdraw to create a favorable situation for counterattack. Withdrawals require the authority of the next superior commander.

Breaking Contact

Whenever possible, withdrawals will take place at night. They are covered by intense artillery fire and air strikes. They may be preceded by local counterattacks. In daylight, they are normally hidden by smoke.

Covering Forces

When the main body withdraws, it is covered by motorized rifle and tank platoons left in the forward battalion areas to portray an unchanged defense. Covering detachments left in contact withdraw after the main body passes through the rear security.

Rear Security

A rear security force, reinforced with tanks, occupies a defensive position astride the withdrawal routes before the main body begins to move. It moves back occupying a series of preplanned defensive positions holding each for a specified period. Flank security by units is used throughout.

Main Body

The main body usually withdraws directly to its next defensive position in march column without occupying any intermediate positions.

Threat defenses are based on a series of mutually supporting defensive positions protected by mines and obstacles with interlocking fields of fire from flank units. Threat defensive positions are supported by fires from artillery and mortars. The main strength of Threat defense comes from the collective strength of mutually supporting positions rather than the strength of individual strongpoints.

However, it must be emphasized that what has been presented represents *doctrinal basis* for Threat force defense at battalion and lower levels. What you actually find on the battlefield will depend on local circumstances.

Section III. TACTICAL MOVEMENT AND CONTROL MEASURES

The company team conducts a tactical movement during both a movement to contact and the approach phase of an attack. The following considerations govern the conduct of a tactical movement:

- Reconnaissance.
- Dispersion.
- All-around security.
- Cover and concealment.
- Speed.
- Observation and fields of fire.
- Maneuver space.
- Command and control.

Reconnaissance as George S. Patton Jr stated in his "Letter of Instruction Number 3," 20 May 1944, "Many tanks are lost through the failure of the crews or the platoon leader to make foot reconnaissance. People get vehicle bound and never dismount. Before exposing a valuable tank and the lives of its crew to the danger of destruction by crossing an unreconnoitered skyline or emerging from cover, a foot reconnaissance with glasses should be made. Here again we have the question of haste and speed. It may seem

a waste of time to take a look, but it is certain death to get on the front slope within effective range of undiscovered antitank (weapons) or lurking enemy tanks."

Dispersion gives the company team more flexibility to react and protects freedom to maneuver. The faster the force moves, the more dispersion in depth is needed. Lateral dispersion decreases control and the ability to move rapidly, but increases flank security. Disperse the force laterally and in depth when the enemy situation is unclear or the terrain is open. This allows contact with the smallest element possible.

Maintain *all-around security* while moving. Make sure fighting vehicles and dismounted infantry orient weapons to the front, flanks, and rear while moving. Adopting overlapping sectors of observation ensures the detection of any signs of enemy activity, especially obstacles and antitank weapon positions. Air guards constantly search for approaching enemy aircraft.

These local security measures supplement the security forces established by higher headquarters to provide early warning of enemy activity. The battalion task force scout platoon normally conducts a screen forward of the task force during movement. Flank and rear security elements may be used when the battalion task force is moving independently.

Cover and concealment as explained by George S. Patton Jr in his "Letter of Instruction Number 3," 20 May 1944, "The quickest way to get to heaven is to advance across open ground swept by effective enemy antitank fire . . . Wherever (enemy) antitank guns have gotten our tanks, it has almost always been our own fault. In spite of years of instruction, tanks will go up obvious tank lanes such as cart tracks, open river bottoms, small roads or paths, or along hedges—all of which any intelligent antitank gunner will have arranged to cover. Furthermore, tanks will insist, as I have already said, in crossing skylines or emerging from cover without looking, in spite of the fact that it is well known that (enemy) antitank (weapons) are generally on reverse slopes or in positions to fire at right angles to the axis of advance. Again, due to maneuver experience, tanks seek visual cover afforded by bushes, failing to remember that these do not stop bullets. The only cover behind which a tank has any security is that afforded by earth defilade."

Speed is also important in an assault. Once the coordinated attack has begun, the assault on the enemy must be as rapid and violent as possible. The slower the company team's movement forward, the longer it will be exposed to enemy fire. Slow movement also allows the enemy to react and reposition its forces to defeat the assault. Speed increases the momentum of the attack, makes vehicles harder to track and engage, and pushes through enemy defenses and into the enemy rear area.

Speed also degrades the commander's control of his forces and limits his ability to react. Nothing makes a kill zone more deadly than a headlong charge into an unexpected obstacle. Good reconnaissance, thorough preparation, and audacity yield the greatest results on the battlefield.

The overwatch element must have *good observation and fields of fire* and long-range weapons and sights to suppress enemy resistance.

Select avenues of approach that give the company team plenty of *maneuver space*. A two-lane road is an adequate avenue if there is no enemy resistance. A company team making a movement to contact or a hasty attack will generally need a maneuver corridor 800 to 1,200 meters wide. This depends on the terrain and the enemy. (For further information on maneuver formations, see "Combat Formations.")

Command and control was explained by George S. Patton Jr in his "Letter of Instruction Number 3," 20 May 1944. "There is a regrettable tendency on the part of company officers and noncommissioned officers to accompany the firing line as if they were members of a well-trained chorus, simply keeping position . . . Officers and noncommissioned officers are there for the purpose of seeing that all the weapons of their respective . . . commands are functioning. They cannot see this by simply accompanying the movement; they must direct it."

The selection of maneuver formations and speed of movement must balance the need for control with the tactical requirements of terrain and enemy resistance.

COMPANY TEAM MISSIONS

Maneuver Element

The company team is normally given the mission of seizing an objective. The objective may be occupied by enemy forces or undefended. Continued maneuver, attack by fire, or bypass is conducted from this objective.

Overwatch or Support-by-Fire Element

Frequently, the company team will overwatch or support by fire the maneuver or assault of other company teams. The task force commander gives the company team a battle or overwatch position for this mission. The company observes the enemy and provides information to the maneuver element. It places destructive, suppressive fires on known and suspected enemy positions, adjusts indirect fires to support the maneuver force, protects the maneuver force against counterattacks, and provides other assistance. (See Figure 3-6.)

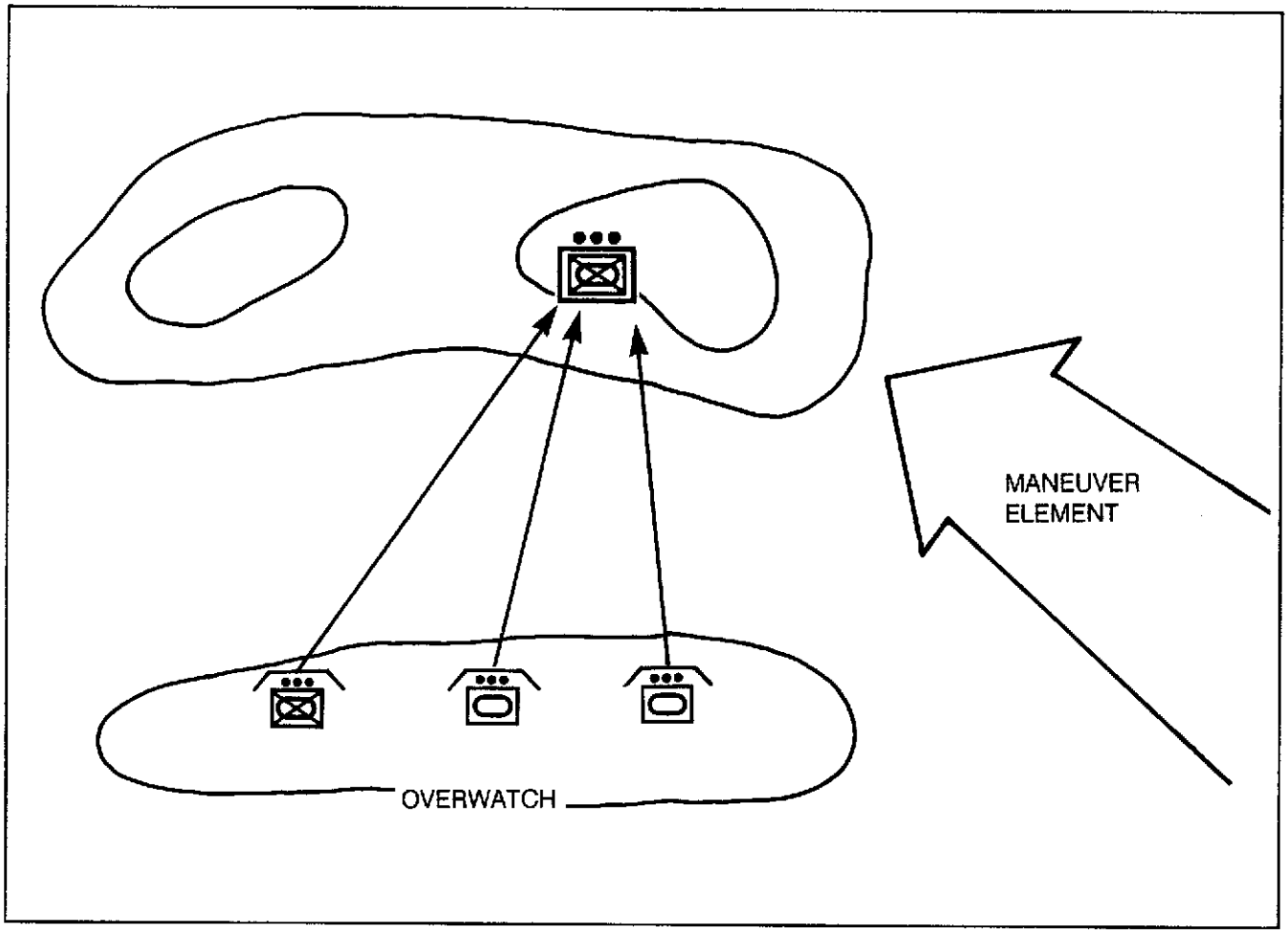


Figure 3-6. Company Team Overwatch as Part of the Task Force Attack.

Coordinating with the assault team(s) is critical. Coordinate face-to-face when possible. This includes joint-leader reconnaissance and attendance at orders. Face-to-face coordination helps the overwatching commander understand the scheme of maneuver and fires of the assault team(s).

If possible, reconnoiter the support-by-fire position and make a detailed scheme of occupation and fire plan.

Graphic control measures permit the overwatch element to stay aware of the location of the maneuver force to preclude fratricide. Use colored smoke, flares (for thermal sights), and pyrotechnic signals to mark targets and to indicate shifting or lifting fires. The commander and the XO may collocate so the XO can monitor the maneuver element's internal net and pass critical information to the commander.

Task Force Reserve

The company team may be designated as the task force reserve and move in the depth of the task force formation. Its general location and possible missions are normally specified. The commitment of the reserve is the most critical decision of the task force commander. The reserve may be assigned one or more of the following missions or tasks:

- Assume the mission of an attacking company team.
- Attack from a different direction.
- Support attacking company team(s) by fire.
- Clear a position that has been overrun or bypassed by attacking company team(s).
- Maintain contact with adjacent units and flank security.
- Provide flank security to the task force.
- Protect or assist during the consolidation on the objective.
- Guard and evacuate prisoners.
- Protect key intersections and bridges.
- Block a counterattack.

When acting as task force reserve, coordinate face to face with the lead company team commanders. The team maintains its position but does not become decisively engaged by enemy action against the lead company teams. Traveling or traveling overwatch is used. Leaders move near the front of their formations to facilitate control and reactions.

COMBAT FORMATIONS

Designating the formation to be used by the company team—

- Establishes the relationship of one platoon to another on the ground.
- Expresses where you envision the enemy to be and how you intend to react to contact.
- Establishes where fire power is needed.
- Establishes the degree of security desired.

The company team and its platoons can use five basic combat formations: combat column, wedge, vee, echelon, and line. Unless so directed, it is not necessary to use the same formation as the battalion task force. For instance, the task force could be advancing in a column while one or more of its companies is advancing in a wedge formation. Similarly, the platoon leaders will select the formations they think most appropriate for the current situation, unless otherwise directed by the company commander.

A combat formation is not rigid. Terrain and common sense will frequently dictate needed changes. During a movement to contact, for example, greater dispersion provides better security, more flexibility, and more time to maneuver the forces in response to enemy contact. Use the following examples of combat formations as a general guide.

The *combat column* formation is a modification of the standard column formation. (See Figure 3-7.) Use it when enemy contact is possible and the terrain allows for dispersion. This formation increases security against enemy air and artillery attacks by its greater dispersion. It also—

- Provides good security and permits maximum fire to the flanks, but restricts fire to the front.
- Facilitates control.
- Facilitates rapid deployment in other formations.
- Provides the depth and time needed to deploy the platoons once enemy contact has been made.
- Facilitates rapid movement.

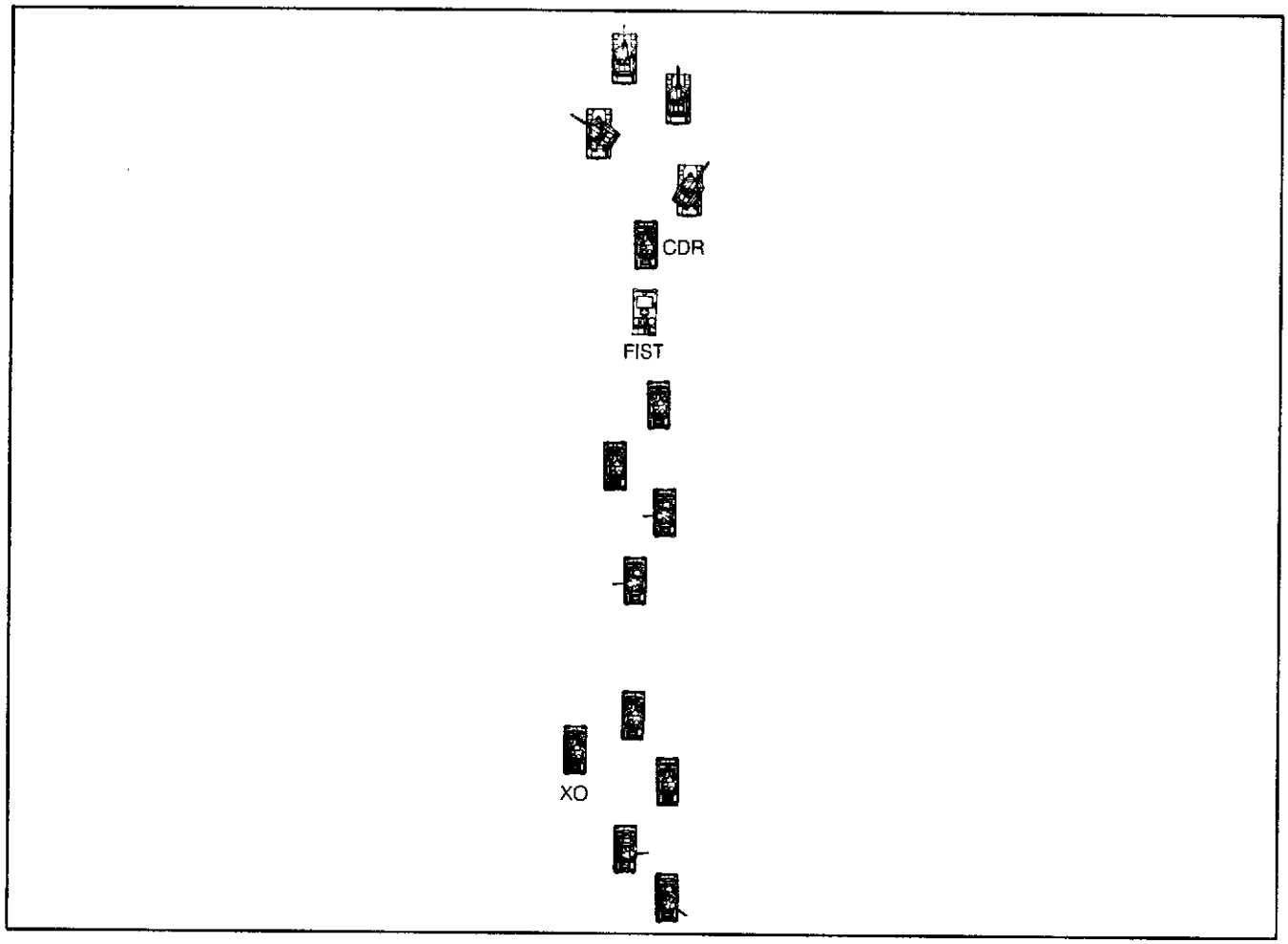


Figure 3-7. Combat Column Formation.

The *wedge* formation is often used when the enemy situation is vague and contact is imminent. (See Figure 3-8.) It—

- Permits excellent fire to the front and good fire to each flank.
- Facilitates control.
- Permits sustained effort and provides flank security.

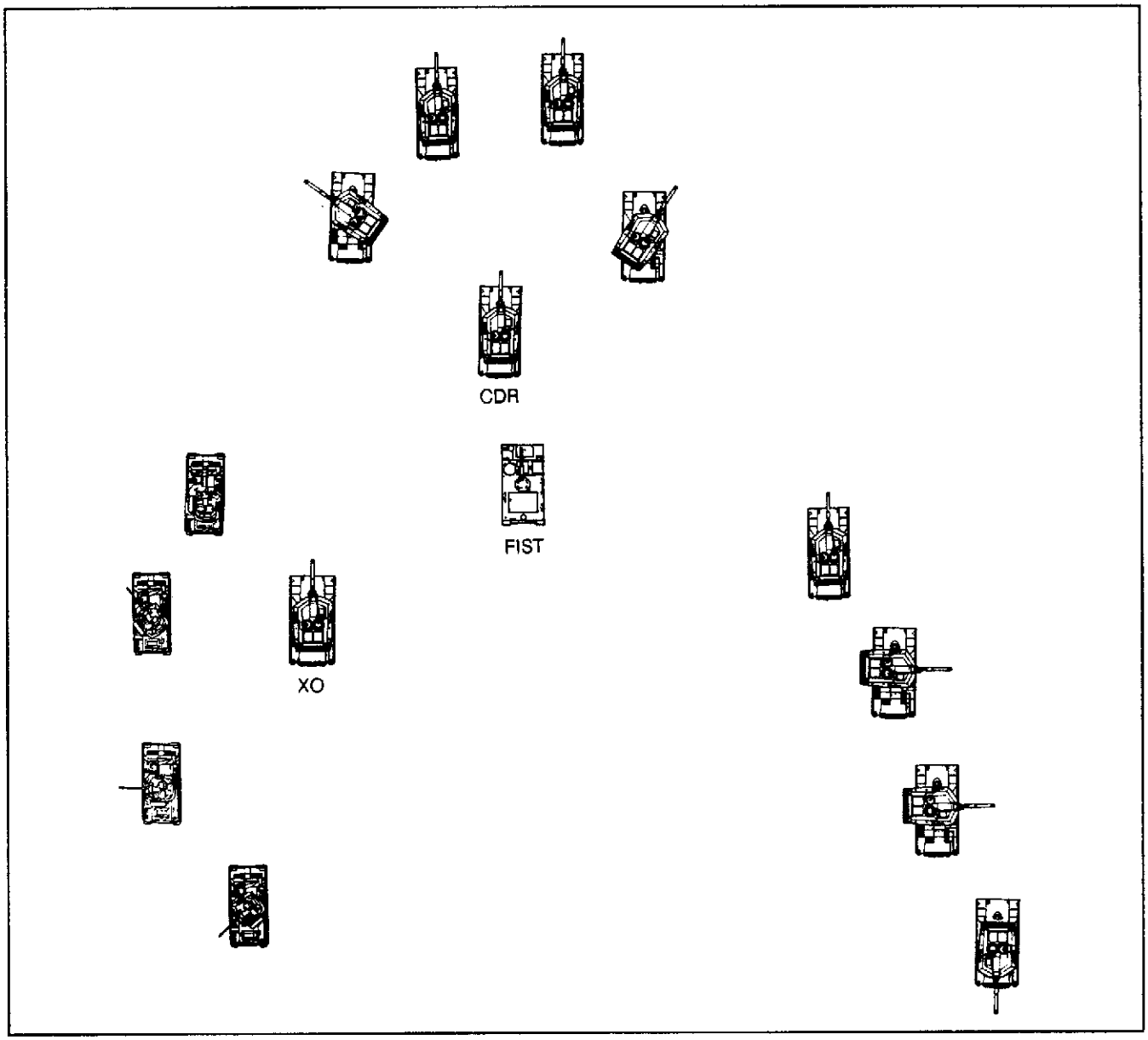


Figure 3-8. Wedge Formation.

The *vee* formation is used when probability of contact with the enemy is high. (See Figure 3-9.) This formation—

- Is more difficult than the wedge to maintain orientation.
- Has less control in wooded areas.
- Provides more firepower to the front than the wedge and good fire to the flanks.
- Maintains freedom of maneuver of one platoon after contact has been made.
- Facilitates rapid transition to the assault.
- Facilitates rapid deployment into any other formation.

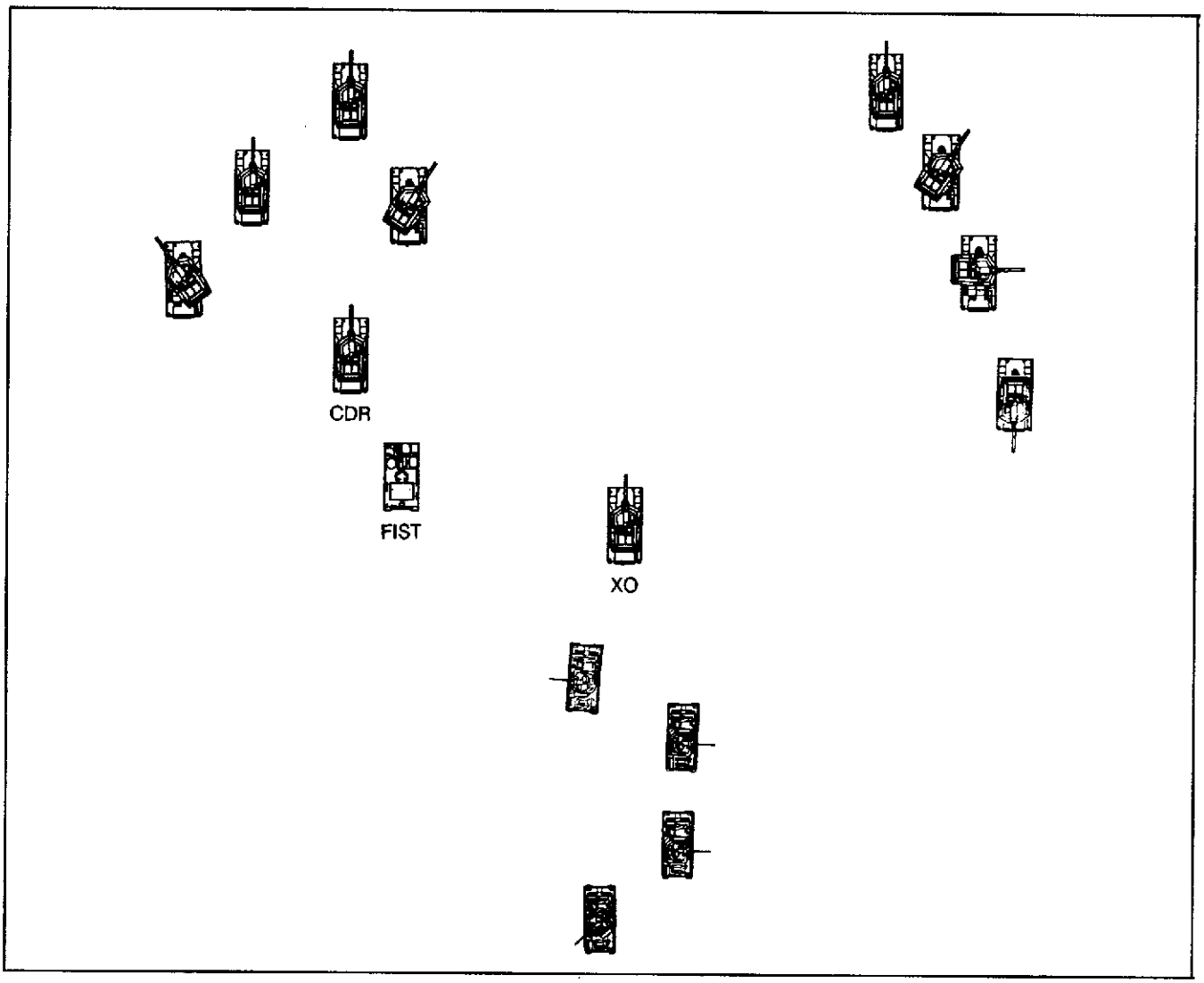


Figure 3-9. Vee Formation.

The *line* formation should be used when emerging from smoke, crossing crests, leaving woods, and assaulting an objective. (See Figure 3-10.) It is used in supporting positions (overwatch and support by fire). This formation –

- Permits maximum fire to the front or rear, minimum fire to the flanks.
- Is the most difficult to control.
- Is less secure due to the lack of depth.
- Permits closing on the objective in minimum time.

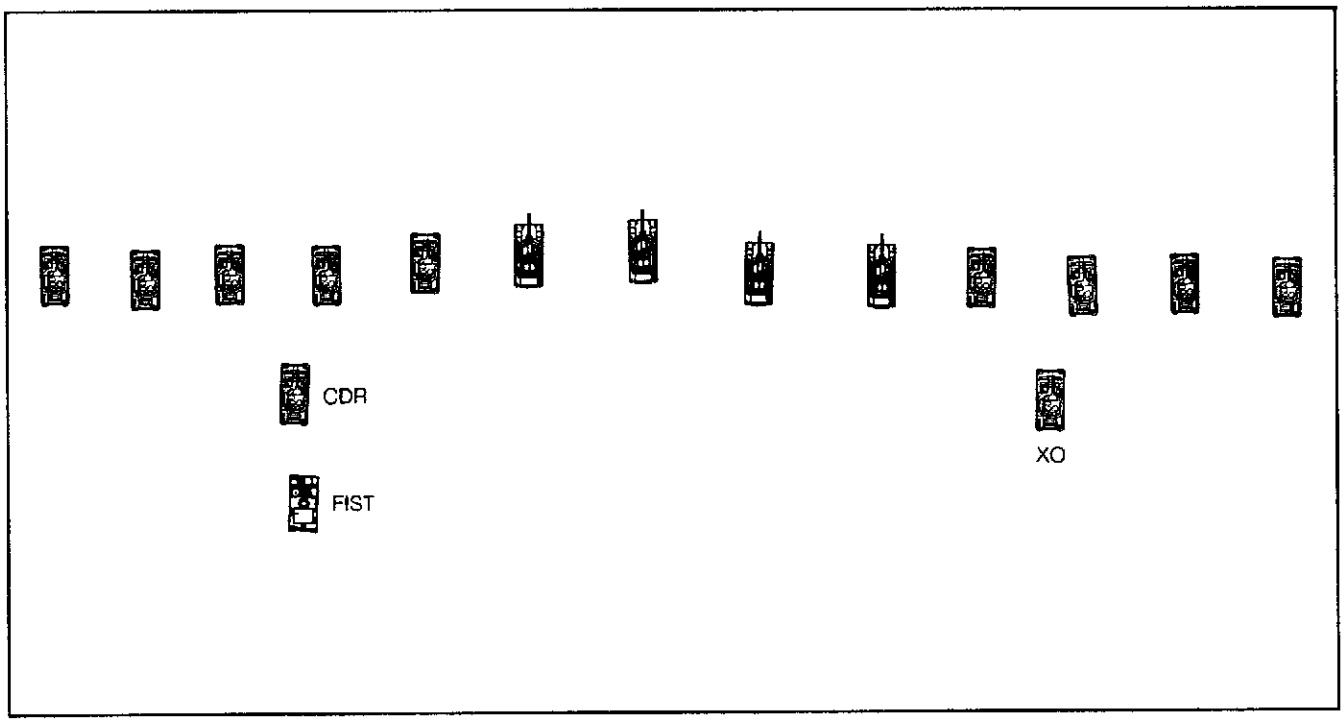


Figure 3-10. Line Formation.

The *echelon* formation is used when the task force faces a significant flank threat. It –

- Is similar to the column formation but with platoons staggered to left or right.
- Is difficult to control, especially in wooded terrain.
- Provides the best security to the echeloned flank for the higher formation.
- Facilitates deployment perpendicular to the line of march.

Positioning of Platoons

Based on the factors of METT-T and the current situation, the company commander should establish the specific location of the platoons within the company team formation. The location of specific tanks

can be varied based on the platoon leader's estimate of the situation. Some basic considerations in positioning platoons include:

- Tanks lead the assault against automatic weapons, antipersonnel mines, wire entanglements, and enemy armored units.
- Tanks and infantry move together in the assault against entrenched infantry, jungle positions, heavily fortified areas, towns, and villages and during periods of low visibility.
- Infantry and engineers lead the assault against constructed antitank defenses (such as tank ditches, abatis, and minefields), across defended river lines, through heavy woods, within cities, and in mountainous terrain. Tanks and BFVs provide overwatch and support by fire.

Movement Techniques

Tactical movement techniques are used in conjunction with formations. They allow the company commander to establish the relative degree of security appropriate for the team's movement. (See FM 17-15 and FM 7-7J for more information about movement techniques.)

Section IV. MOVEMENT TO CONTACT

Ferdinand Foch said in *Precepts*, 1919, "When you move at night, without a light, in your own house, what do you do? Do you not (though it is ground you know well) extend your arm in front so as to avoid knocking your head against the wall? The extended arm is nothing but an advance guard."

Movement to contact is an offensive operation designed to gain or regain contact with the enemy. (NATO uses the term advance to contact.)

CHARACTERISTICS OF A MOVEMENT TO CONTACT

The enemy situation is vague. Therefore, the unit uses formations and movement techniques allowing the greatest amount of flexibility and security. The unit conducting a movement to contact leads with a minimum of its combat power forward, freeing the bulk of its combat power to maneuver.

ELEMENTS OF A TASK FORCE MOVEMENT TO CONTACT

A unit conducting a movement to contact organizes in two successive elements: a security force and the main body. This organization permits the depth of formation necessary to provide early warning and reaction time for the commander. Companies in the main body move, using techniques that maximize control, speed, and flexibility. The main body reacts to the situation based on the actions of the security force.

The security element is sometimes called the advance guard. The advance guard company team protects the task force from surprise by observing and reporting enemy activity. It maintains surveillance, provides early warning to the main body, impedes and harasses the enemy with supporting indirect fires, and, within its capability, destroys enemy reconnaissance elements. The missions of the advance guard are to—

- Report enemy contact to the task force commander.
- Collect and report all information about the enemy.
- Select tentative fighting positions for on-coming task force units.
- Attempt to penetrate enemy security elements and reach and identify the enemy main force.

- Perform chemical and engineer reconnaissance.
- Bypass or breach (in stride) hasty obstacles.

The main tasks of the advance guard are to perform reconnaissance and forward security in addition to, or in place of, the battalion scout platoon. In relatively open terrain, a tank-heavy team augmented by engineers permits the greatest flexibility. This force has the firepower and versatility to develop the situation after enemy contact, breach minor obstacles, secure small terrain features, and clear villages and small wooded areas.

The lead company in a battalion task force movement to contact provides forward security to the task force. The specific tasks assigned and the degree of risk accepted depend on METT-T and—

- The task force commander's intent.
- The route or axis and rate of advance of the task force.
- The frontage to be covered by the company.
- The fire support available.
- Possible assistance from tactical aircraft and air cavalry units or Army aircraft.
- The mission of the company team upon discovery of the enemy (hasty defense, fix the enemy, bypass).

You will often be expected to conduct a hasty attack to destroy small enemy forces that attempt to impede advance. An SOP consisting of simple battle formations (such as combat column and wedge) and battle drills (such as contact and action) is useful in dealing with light opposition.

The company maintains continuous observation to its front and flanks and advances with boldness and decision. Be prepared to accept necessary losses. Never let the greater part of the force remain inactive on a road, in the open, or in front of an obstacle while lead tanks engage the enemy at long range. Deploy rapidly, mass firepower, and attack the enemy.

If enemy resistance cannot be overcome quickly, the task force commander may require the company team to provide a base of fire to support the maneuver and attack by the task force. The attack may be an envelopment using the company team as a pivot or a penetration. As the maneuvering force approaches the objective and the fires of the team are masked, movement to a more advantageous position will be necessary to support the assault.

When moving cross-country, the company team advances in combat column or wedge formation over a broad front. Moving in a combat column is preferred in less open areas. It provides a greater security because of the depth of the formation. If the terrain is rough, it may be best to move by bounds. Each platoon moves forward on the assigned axis, taking advantage of available cover and concealment, searching for indications of enemy activity, and employing reconnaissance by fire against possible enemy locations. If one of the platoons in the team meets resistance on its axis, the platoons nearest it support by fire. If possible, they should limit their maneuvering for better firing positions to their own respective axis. If the resistance is too strong for the company team to overcome, request supporting fires from the task force and attack the enemy position or request permission to bypass the resistance after reporting its location and nature to the task force commander.

A night advance is conducted in the same general manner as a daylight advance. Keep in mind that distances between elements are shortened, frontages may be reduced, the rate of advance is slower, and supporting fires are less effective; but the possibility of gaining surprise is greatly increased.

ACTIONS ON CONTACT

A movement to contact often results in a meeting engagement. Such engagements occur when contact with the enemy is made suddenly, with little or no prior information concerning its size, location, and disposition. The enemy force may be stationary or moving. When contact is made, the first few seconds or minutes reaction may determine if you win or lose the fight. A number of actions must take place immediately.

Return Fire, Deploy, and Report

The platoon under fire moves aggressively using fire and movement to suppress the enemy, seeks covered and concealed fighting positions, and establishes a base of fire. These actions will be accomplished through battle drills executed by the platoon and section or squad. The platoon leader reports contact to the company team commander. The overwatching platoon immediately returns fire. The company team FSO requests indirect fires on the reported enemy position.

Develop the Situation

The element in contact continues the fight and gains information. The density and type of enemy fire, positions and orientation of obstacles, and other terrain information tells much about the enemy. The element in contact must be audacious without being rash. The platoon in contact reports all information to the commander. Move to a vantage point to see the situation personally, if possible. The XO reports the situation to the task force. If the platoon in contact is unable to maneuver or develop the situation, maneuver another platoon(s) and use indirect fire to put pressure on the enemy in an effort to develop the situation.

Choose a Course of Action

Based on the estimate of the situation, recommend one of the following courses of action to the task force commander:

- Continue to develop the situation.
- Conduct an ambush.
- Conduct a hasty attack to one flank of the enemy.
- Bypass.
- Fix the enemy while the task force bypasses or conducts a hasty attack.
- Conduct a hasty defense.

Section V. CONDUCT OF THE ATTACK

As George S. Patton Jr said in *War as I Knew It*, "Battles are won by fire and by movement. The purpose of the movement is to get the fire in a more advantageous place to play on the enemy. This is from the rear or flank."

ACTIONS OF THE COMMANDER IN THE ATTACK

Leaders must lead. The commander does not have to be the first vehicle in the unit, but he must be able to see the progress of the lead platoon in the team. The commander's main function on the

battlefield is to command and control the company. He must go wherever, and accept whatever risks necessary to perform that function. He uses cover and concealment to position himself, but moves so he can see the fight and control the unit.

The task force commander depends on company commanders to keep him advised of all changes in the situation. The XO assists in this task. He stays on the task force net and monitors the team's internal net to stay abreast of the tactical situation.

METHODS OF ADVANCE

Movement En Masse

When possible, tanks proceed rapidly en masse to the objective without halting. Casualties can be reduced by shortening the time of exposure to enemy fire by rapid movement to the objective, and by keeping the objective covered with supporting fire. (See Figure 3-11.)

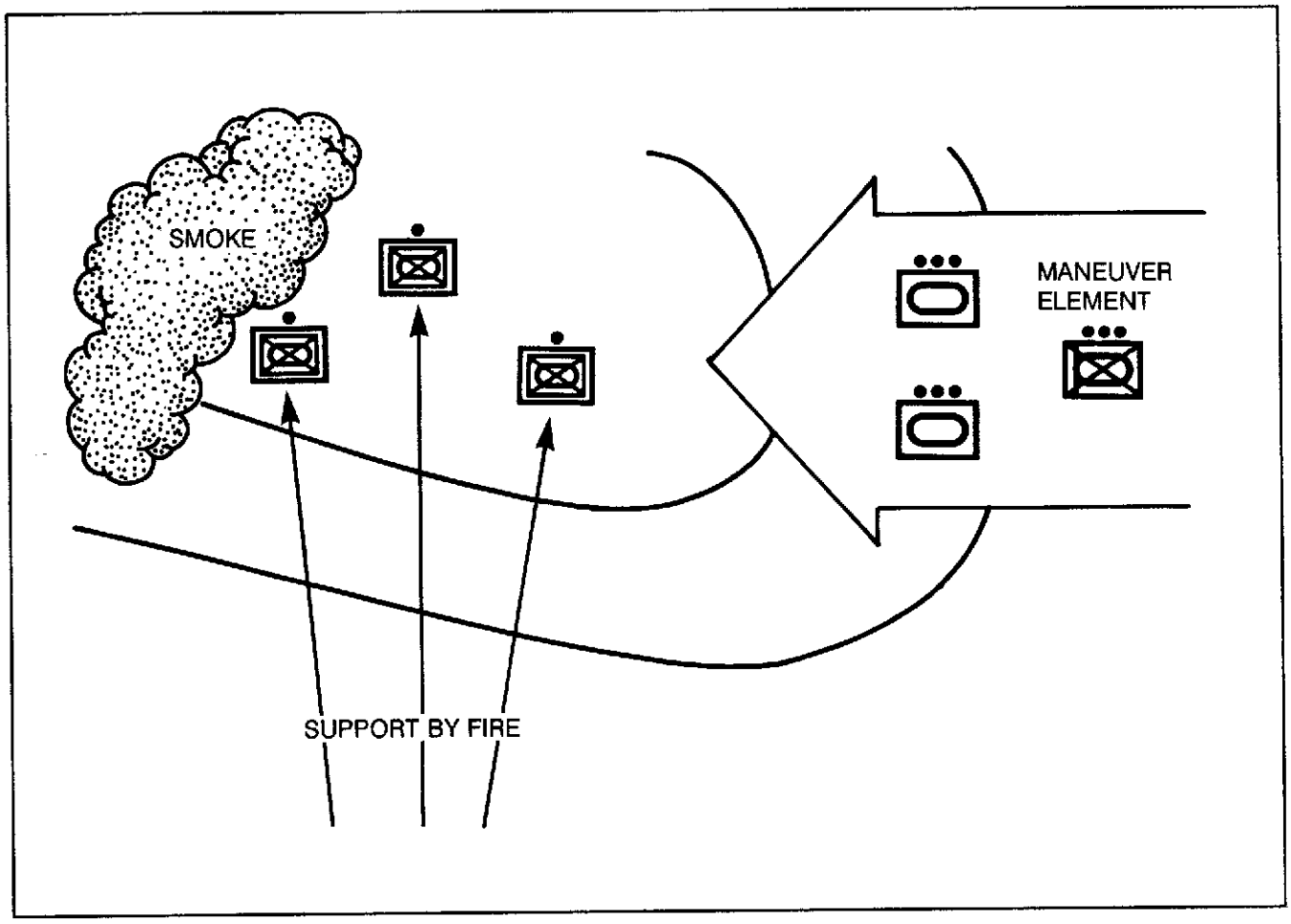
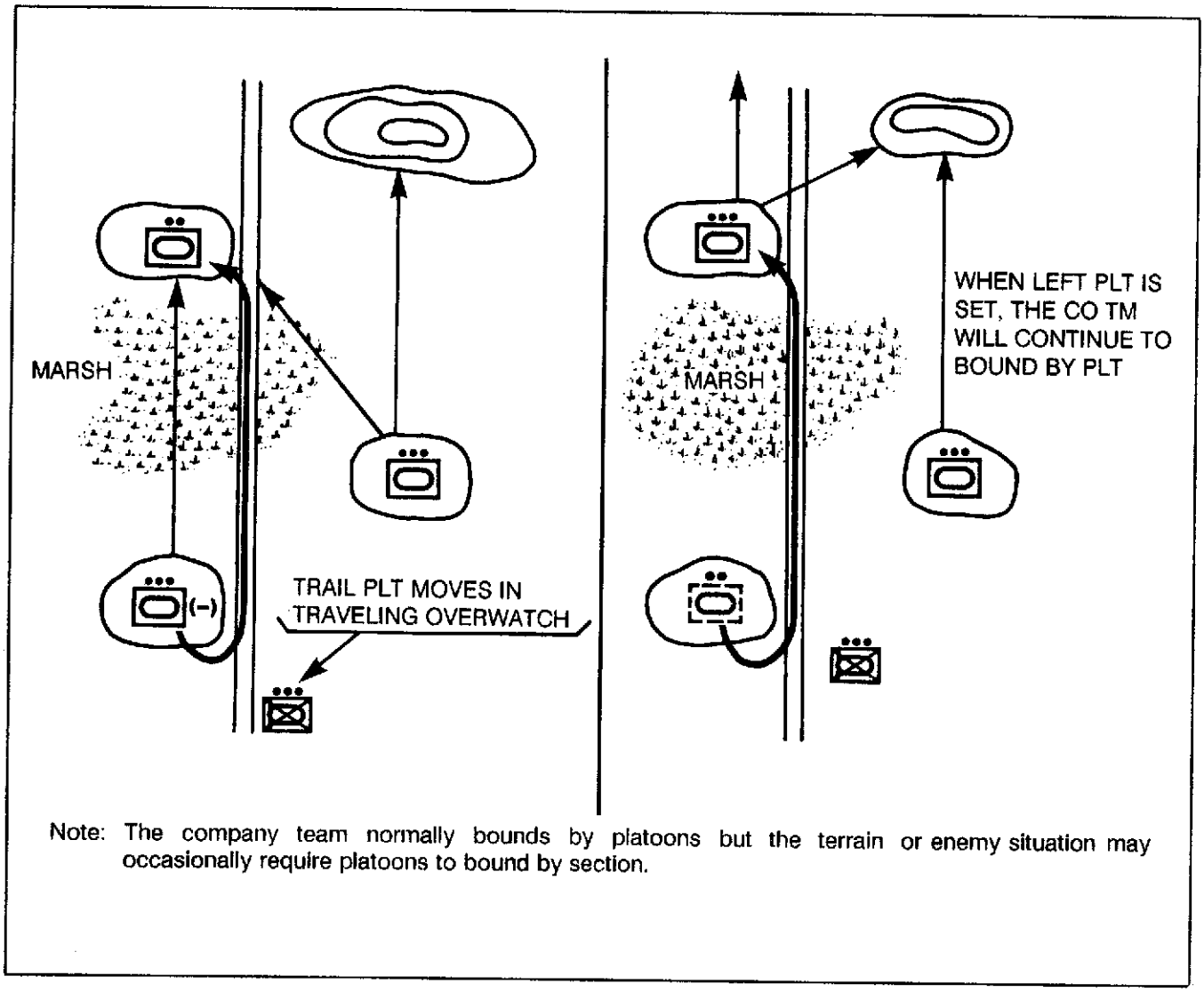


Figure 3-11. Company Team Moving en Masse.

Movement by Bounds

When enemy contact has been established or when enemy forces are known to be in the immediate vicinity, move by bounds. Movement by bounds increases security, but reduces speed of advance. Therefore, when moving by bounds, move as rapidly as the terrain permits. Tanks should not remain stationary any longer than necessary to support the advance of other tanks and BFVs. When rapid movement en masse is not possible and the terrain and enemy dispositions require that movement of some tanks be covered by other tanks or BFVs, move by bounding overwatch. Normally, bounds are made by platoons. But sections may move by bounds and, therefore, platoons must be thoroughly trained to bound by section. (See Figure 3-12.)



Note: The company team normally bounds by platoons but the terrain or enemy situation may occasionally require platoons to bound by section.

Figure 3-12. Platoons Bounding by Sections.

FIRE AND MOVEMENT

Fire neutralizes, suppresses, demoralizes, and destroys enemy forces. Movement brings this firepower into positions from which it extends and completes destruction. Maneuver consists of fire and movement. Fire, direct and indirect, placed on the enemy to reduce its capability to interfere with friendly moving elements is a base of fire. The base of fire permits the forward movement of friendly forces and suppresses enemy direct-fire weapons.

The base of fire and overwatch are not synonymous terms. The overwatch element can observe friendly movement and respond with immediate suppression of enemy positions engaging the moving element. If the enemy is not visible and does not engage the moving force, the overwatch element does not necessarily fire.

The base of fire actively suppresses an objective with direct and indirect fire. The base of fire always fires at the objective to support the moving unit's assault. (See Figure 3-13.)

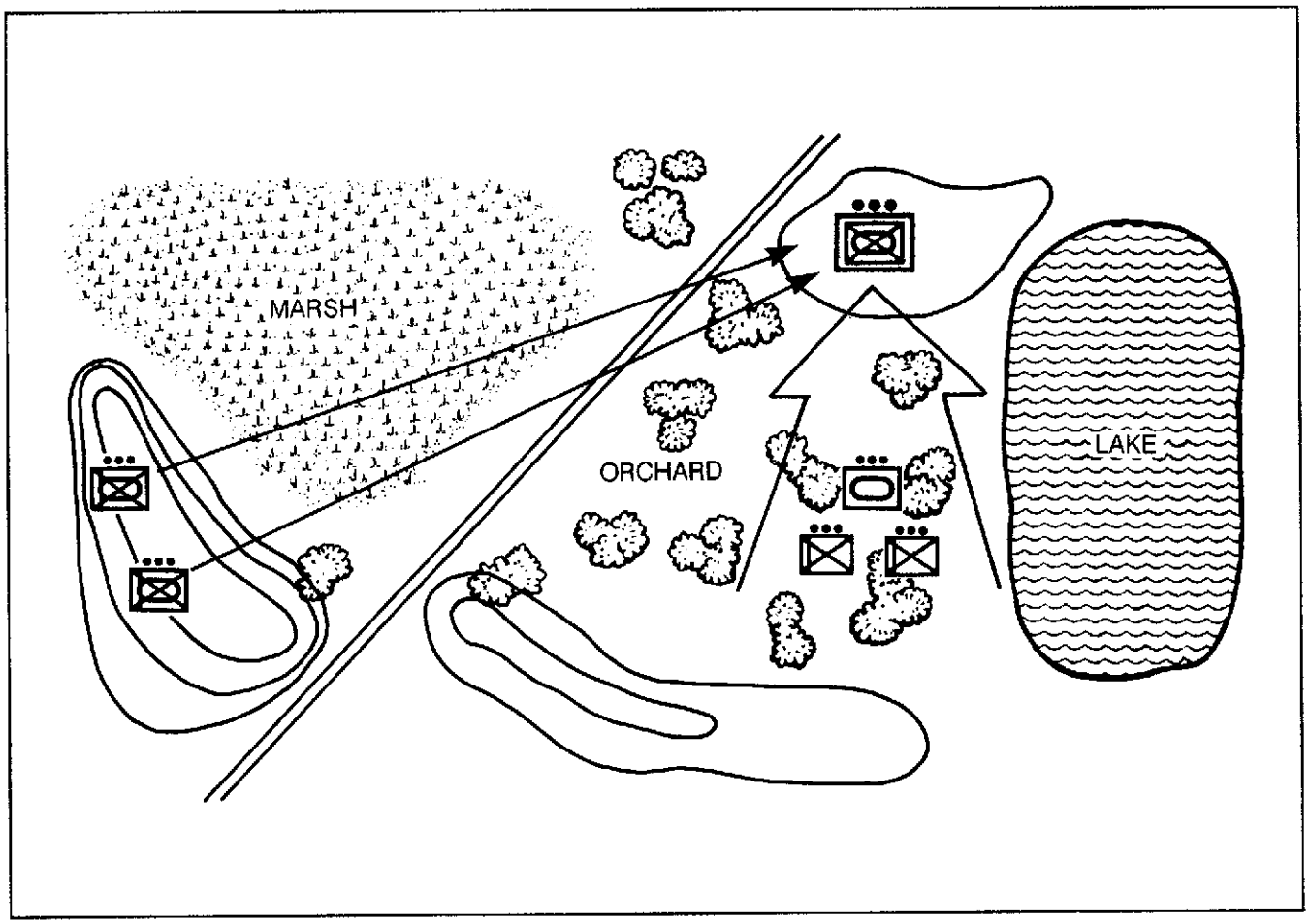


Figure 3-13. Tanks Leading Dismounted Infantry with BFVs Providing the Base of Fire (Overwatch).

The base of fire for a company team is determined by the task organization of the team. Tank-heavy teams use tanks to build the base of fire. Mechanized-heavy teams may have to use BFVs to support the mounted movement by fire. When using BFVs as the base of fire, consider two disadvantages:

- TOW missiles have slow flight times when engaging bunkers or tanks.
- BFV dismounted infantry squads have difficulty joining the battle. The 25-mm chain gun is an excellent suppressive weapon against all but enemy tanks. In most circumstances when enemy tanks are present, a tank is a better suppression weapon than a BFV.

The maneuver force normally does not advance beyond the effective supporting range of the base of fire. To allow continuous support, the maneuver and overwatch elements switch roles as shown in Figure 3-14, or the overwatch element displaces forward by bounds staying within supporting distance of the maneuver element as shown in Figure 3-15.

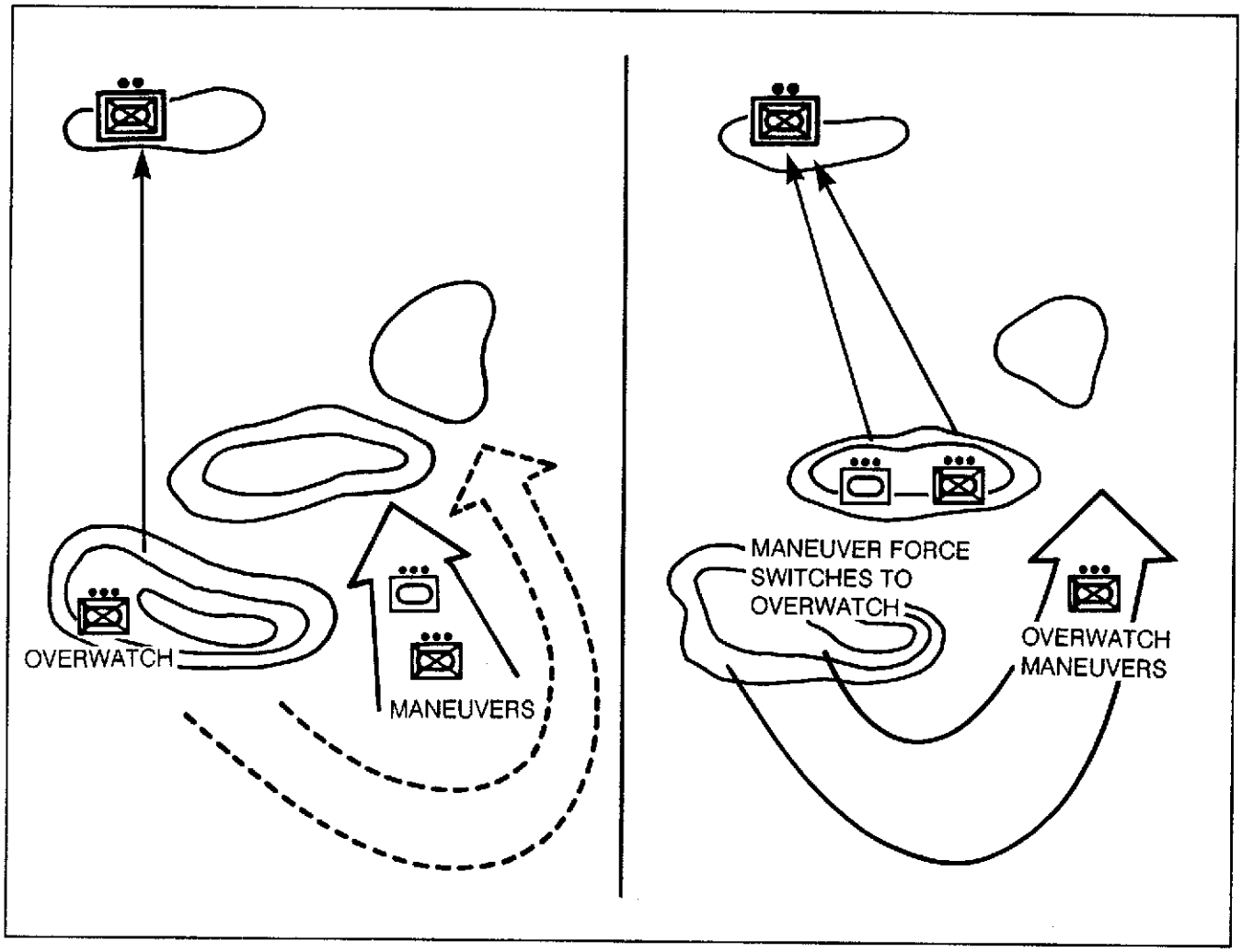


Figure 3-14. Maneuver and Overwatch Elements Switch Roles.

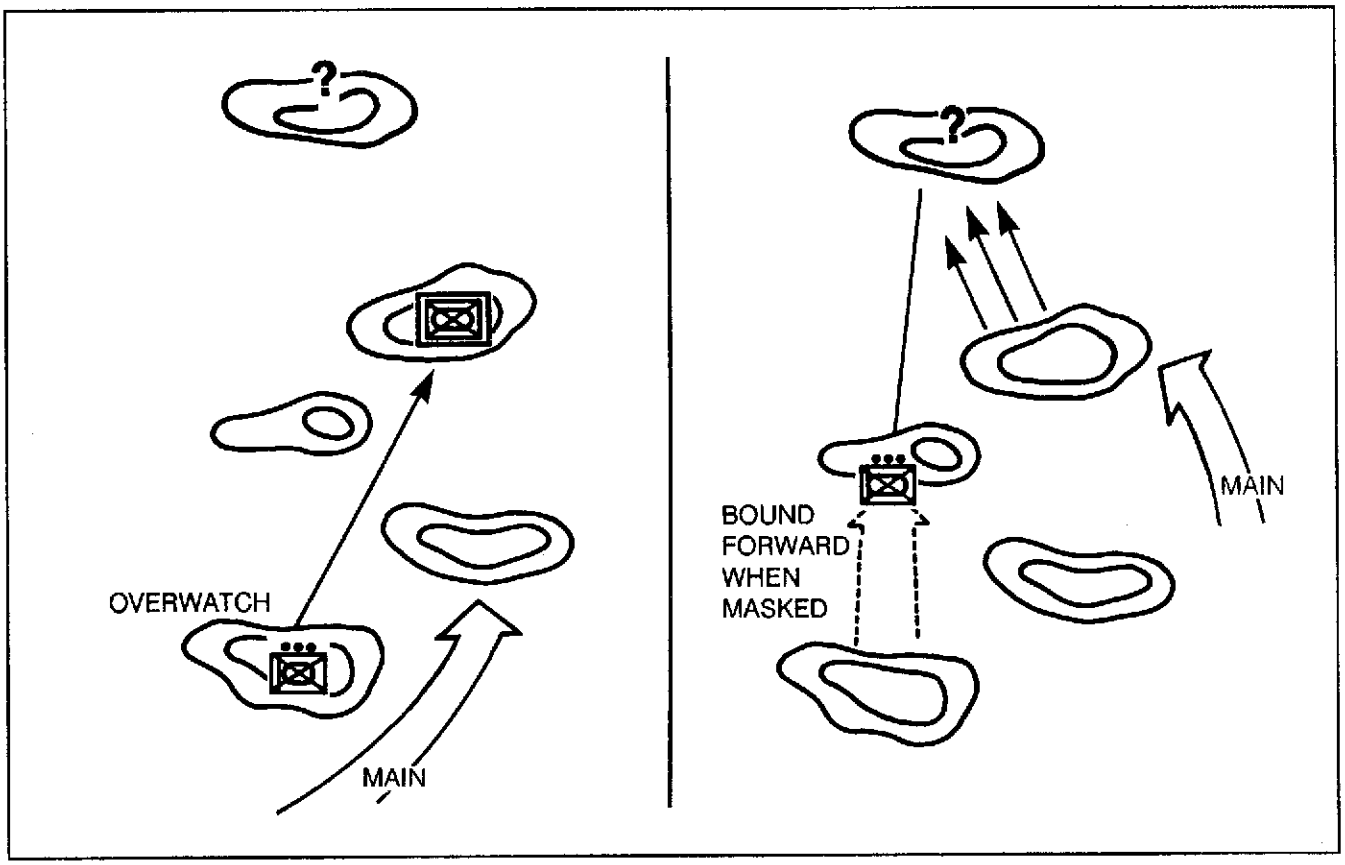


Figure 3-15. Overwatch Displaces by Bounds.

Normally, the base of the fire element moves forward, on order, after the objective has been occupied by the maneuver force. In dynamic situations, it may be necessary for the two elements to fire and move alternately. Some common considerations of a moving force are—

- The moving force should neither mask overwatching fires nor move outside their protective umbrella.
- The overwatch element should—
  - –Provide protection to the moving force by observation and indirect fires and by direct fires.
  - –Be controlled by one individual to facilitate control and distribution of fires. (The one in control must have direct communication with the maneuver force.)
  - –If possible, cover the flanks and rear as well as the front of moving elements.
  - –Have covered and concealed positions.
- The moving element must also observe to the flanks to acquire enemy weapons that might engage its flank(s).
- Normally, the commander accompanies the moving element and the XO controls the overwatch element.

- The moving elements should all use one radio net for control. The overwatch element also uses one radio net.
- If available, engineers accompany the maneuver element to breach obstacles and destroy fortified positions.
- If available, air defense systems accompany the overwatch element.

Note: *Remember*, suppression is the key to movement.

HOW TO ASSAULT

The assault is the actual overrunning and seizing of an occupied enemy position. The assault can be either mounted or dismounted. It can be conducted by the team moving en masse or by the use of fire and movement.

Mounted assaults are conducted against a moving enemy force or where its defenses are weak and can be suppressed. Tanks lead followed by BFVs. BFVs protect against dismounted infantry and provide suppression to the flanks. The assault force moves through to the far side of the objective as rapidly as possible. Infantry dismounts to mop up resistance and clear the objective.

Dismounted assaults are conducted by infantry supported by tanks and BFVs. (See Figure 3-16.) The dismounted assault is required when obstacles and enemy antitank fires preclude tank assault or when the enemy's defenses and terrain provide good dismounted approaches. The dismounted infantry clear the enemy or obstacles as quickly as possible to allow the tanks and BFVs to move forward. Considerations for this type of attack are—

- Indirect fires are moved just ahead of the dismounted force.
- Coordination between the dismounted infantry and overwatching tanks and BFVs is difficult. Colored smoke, flares (for thermal sights), and other measures are used to designate targets and shift supporting fire forward of the infantry.

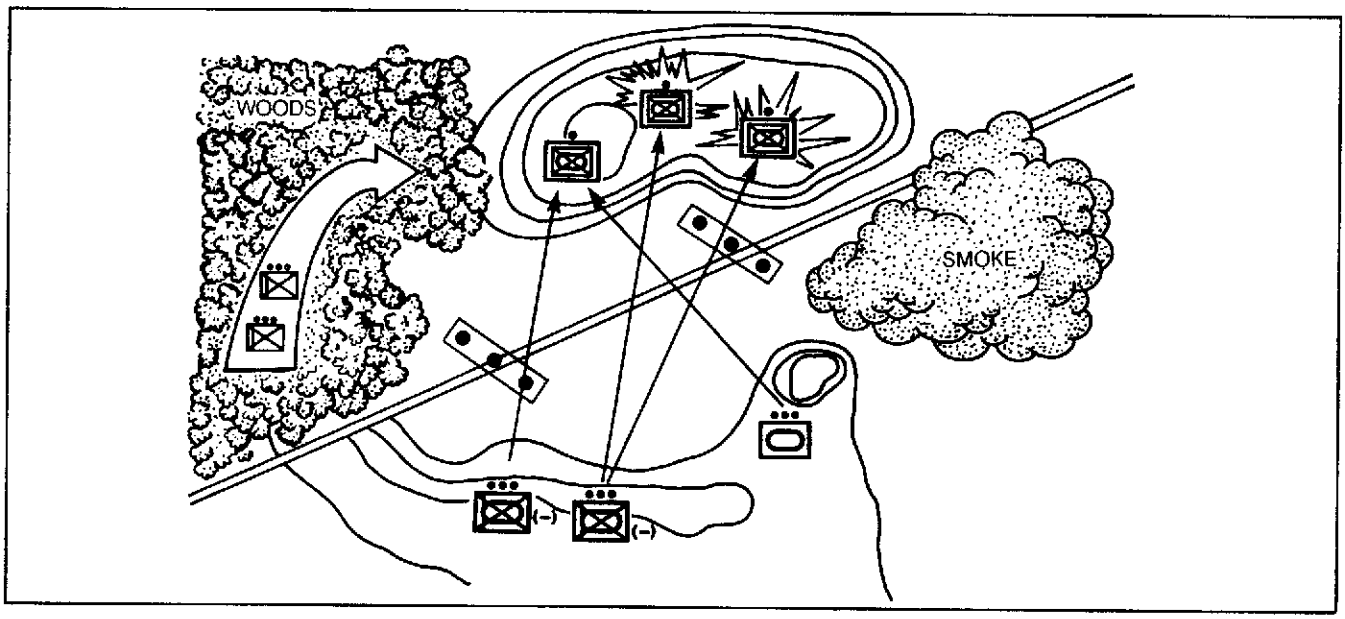


Figure 3-16. Dismounted Assault Supported by Tanks and BFVs.

An assault is most often conducted with tanks, dismounted infantry, and BFVs. Infantry moves mounted as far forward as tactically feasible. Dismounting too early slows down the assault and increases exposure to small arms and indirect fires that the tanks and BFVs will attract. Dismounting infantry too late exposes tanks, BFVs, and infantry to destruction by handheld antitank weapons. Some key considerations for effective assaults are—

- The assaulting force must detect and destroy enemy antitank systems. Modern defenses are built around antitank systems with dismounted infantry positioned to protect the antitank systems. Neutralization of the defender's antitank weapons is the key to an effective assault.
- Assaults across skylines or through open areas should be avoided. If open areas must be traversed, use smoke to conceal movement.
- Destroyed friendly vehicles and defiles indicate danger. Destroyed vehicles usually indicate an enemy EA or fire trap. Defiles through choke points or obstacles are frequently covered by fire.
- All-around security must be maintained. Expect and react to enemy fire from any direction; the natural tendency is to focus on the direction of movement and the assigned objective.
- Mutual support between tanks, BFVs, infantry, and fire support must be maintained. Attack to isolate the defender from support. If possible, attack only one or two enemy weapon positions or part of a dismounted infantry defensive position. Other supporting enemy positions are fixed by company or task force elements.
- A balance between speed and synchronization must be maintained. Moving too slowly allows the enemy to reposition and adjust to defeat the attack. Moving too fast can destroy the synchronization of the attack and be equally damaging to success.

CONSOLIDATION ON THE OBJECTIVE

The actual occupation of the objective is a critical time. The enemy on the objective has been totally destroyed or has surrendered. Control is most difficult at this time. This is also the time when an aggressive enemy will deliver a carefully planned and coordinated counterattack. (See Figure 3-17.)

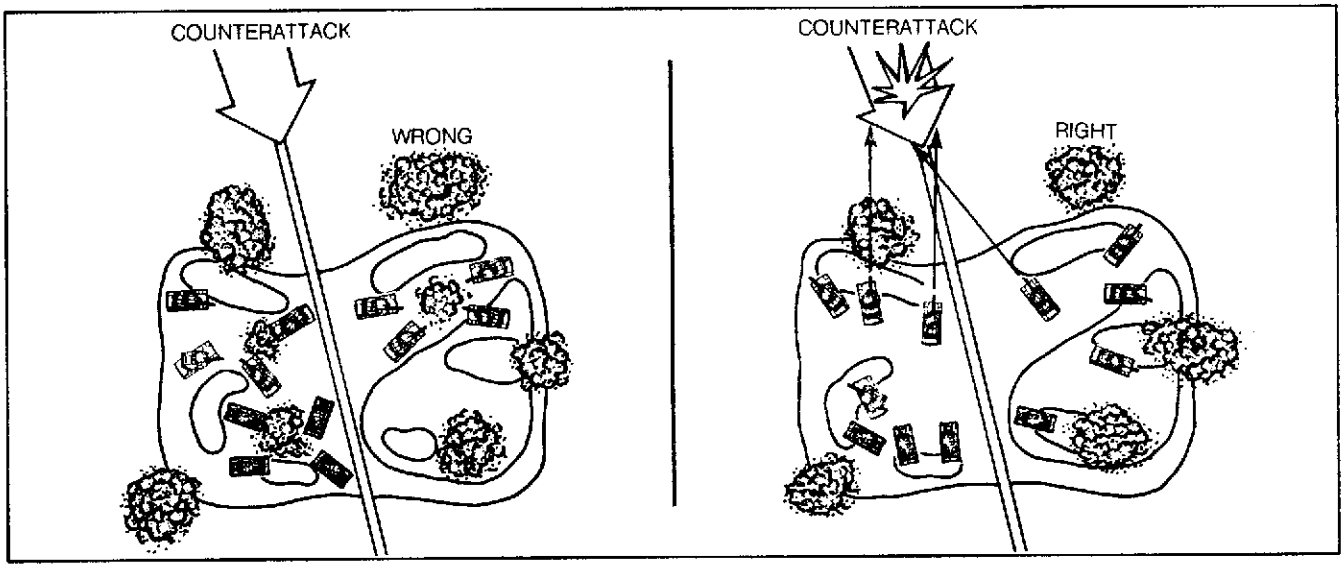


Figure 3-17. Consolidation on the Objective.

Assign a sector to each platoon in the attack plan. As soon as the assault is complete, each platoon moves quickly to its assigned sector and takes up a hasty defensive position. The company prepares to hold the objective against enemy counterattack or continue the attack, depending on the mission.

If the enemy counterattacks to regain the objective, conduct normal defensive action. The measures to be taken against enemy counterattacks are planned before the attack and included in the attack order.

REORGANIZATION ON THE OBJECTIVE

Reorganization must be rapid yet thorough. Each platoon leader reports his casualties, ammunition expenditure, fuel status, and vehicle status to the commander and the XO. The XO or first sergeant passes the reports on to the task force. These reports contain information needed in subsequent planning and orders and, therefore, must be rendered at the earliest possible moment.

If personnel losses are heavy, crew and squad members are reassigned. Survivors of damaged vehicles move to the objective and temporarily replace casualties.

Ammunition from disabled vehicles is redistributed. The maintenance section makes as many repairs as time allows.

The commander is responsible for the evacuation of—

- Wounded personnel (friendly and enemy) in his zone of action.
- Intelligence information (maps).
- Disabled vehicles.
- Prisoners of war.
- Bodies of personnel killed in action (KIA).

If the attack is to be continued, the reorganization must be quick, giving the enemy no opportunity to rally. Issue FRAGOs to update the attack plan.

Section VI. METHODS AND TECHNIQUES OF EMPLOYING TANKS AND MECHANIZED INFANTRY IN THE ATTACK

There are two general methods to employ tanks and mechanized infantry together in an attack—

- Tanks and mechanized infantry (mounted or dismounted) attacking on one axis (see Figure 3-18).
- Tanks and BFVs supporting by fire only (see Figure 3-19).

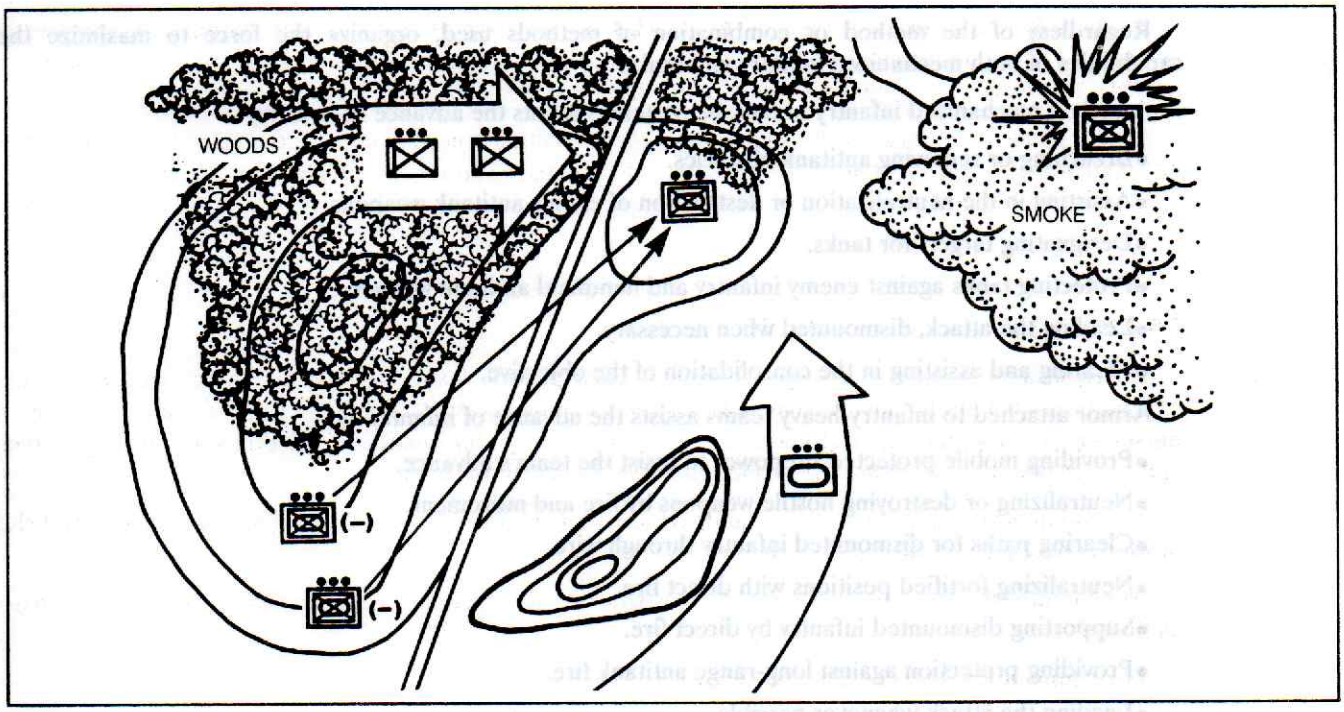


Figure 3-18. Tanks and Dismounted Infantry Attacking Different Axis and BFVs Providing Support by Fire.

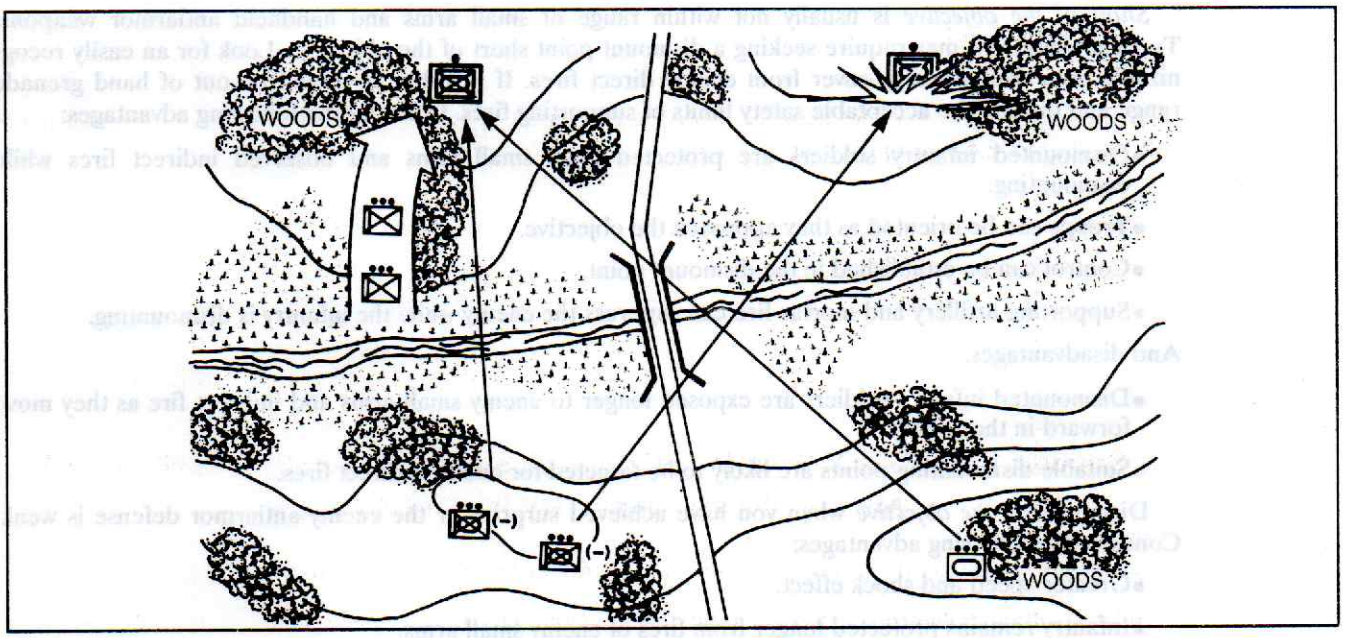


Figure 3-19. Tanks and BFVs Supporting by Fire Only.

Regardless of the method or combination of methods used, organize the force to maximize the capabilities of both mechanized infantry and tanks.

Attached mechanized infantry in tank-heavy teams assists the advance of tanks by—

- Breaching or removing antitank obstacles.
- Assisting in the neutralization or destruction of enemy antitank weapons.
- Designating targets for tanks.
- Protecting tanks against enemy infantry and handheld antitank weapons.
- Leading the attack, dismounted when necessary.
- Clearing and assisting in the consolidation of the objective.

Armor attached to infantry-heavy teams assists the advance of infantry by—

- Providing mobile protected firepower to assist the team's advance.
- Neutralizing or destroying hostile weapons by fire and movement.
- Clearing paths for dismounted infantry through wire.
- Neutralizing fortified positions with direct fire.
- Supporting dismounted infantry by direct fire.
- Providing protection against long-range antitank fire.
- Leading the attack whenever possible.

The mobility and armor protection of BFVs help move infantry across the battlefield quickly. Dismount points may be short of the objective, on the objective, or after passing through the objective.

Short of the objective is usually not within range of small arms and handheld antiarmor weapons. Tactical conditions may require seeking a dismount point short of the objective. Look for an easily recognizable area that provides cover from enemy direct fires. If possible, it should be out of hand grenade range and outside the acceptable safety limits of supporting fires. Consider the following advantages:

- Dismounted infantry soldiers are protected from small arms and observed indirect fires while dismounting.
- Troops can be oriented as they approach the objective.
- Control can be established in the dismount point.
- Supporting artillery and mortar fire can suppress the enemy while the infantry is dismounting.

And disadvantages:

- Dismounted infantry soldiers are exposed longer to enemy small arms and indirect fire as they move forward in the assault.
- Suitable dismounting points are likely to be targeted for enemy indirect fires.

Dismount *on the objective* when you have achieved surprise or the enemy antiarmor defense is weak. Consider the following advantages:

- Greater speed and shock effect.
- Infantry remains protected longer from fires of enemy small arms.
- Supporting fires can continue longer.

And disadvantages:

- Difficulty orienting troops in BFVs to specific objectives.
- Difficulty establishing control at the dismount point.
- Vulnerability of BFVs to short-range antiarmor weapons.
- High volume of suppressive fire is required to support dismounted infantry.

Dismount *after passing through the objective* when a mounted attack is more effective. The state of the enemy antiarmor defense will dictate whether this is feasible. Consider the following advantages:

- Infantry fights from an area and direction unexpected by the enemy.
- Troops can be oriented more readily on the objective.
- Control is more easily established when not on the objective.
- Shock effect on enemy caused by mechanized troops moving through its position is likely to be considerable.

And disadvantages:

- This method may run afoul of enemy positions in depth.
- Suitable dismount point might still be targeted for enemy indirect fires.
- Danger of fratricide from assaulting troops.
- Facing the BFV toward the objective before dismounting is desirable, but the act of turning around makes the infantry more vulnerable and changes the relative positions of assaulting infantry commanders or leaders and, possibly, tanks.
- Assaulting BFVs are very vulnerable as they move through the enemy position.

When considering where to dismount, keep the infantry mounted as long as it is tactically sound to do so.

Having planned where to dismount, be prepared to change that dismount point if the situation dictates. Stay well forward so you can personally judge the situation and make the appropriate decision. Use the BFV to carry assaulting infantry to the objective or as close as possible. This will deliver them fresh and fit to fight. The demoralizing effect on the enemy of the sudden arrival of mechanized infantry closely supported by tanks will often decide the outcome of the battle.

Tanks usually lead an integrated formation. Consider the distance desired between the tanks and BFVs *before* starting the assault. This distance is based on METT-T.

- Mission. If the mission requires rapid, closely controlled movement and closely coordinated, dismounted infantry action, the BFVs will be alongside or closely following the tanks.
- Enemy. The type of enemy unit influences the location of the BFVs in the assault.
- Terrain (and weather). If the terrain is rolling or rough, affording numerous defilade positions, BFVs may accompany or closely follow the tanks.
- Troops. Task organization will also influence the formations and relative positions of BFVs. Few or no tanks will require BFVs in the assault spearhead.
- Time. The less time there is, the closer the BFVs must be to the tanks. This cuts down reaction and response time and permits faster reorganization.

Section VII. OTHER TACTICAL TECHNIQUES AND CONSIDERATIONS

OPTIMIZING FIRES WHILE AVOIDING ENEMY FIRE

Threat tactics show that *you must locate and destroy antiarmor vehicles to defeat enemy defenses.* The success of the attack is determined by how well you optimize your antiarmor fires.

The Tank

The tank is the best assault weapon and the best antiarmor weapon. It will habitually lead the attacking force unless the terrain or enemy prevents forward movement. If this occurs, the infantry will dismount and lead while tanks, armored personnel carriers (APC), and BFVs provide overwatch. Do not employ tanks along open, high-speed avenues of approach unless you are able to suppress enemy antiarmor fires or obscure your movement by smoke. Accurate ATGM and tank fire prohibit any exposed assault over open terrain.

The BFV

TOW missiles and 25-mm cannon of the BFVs provide direct fires on identified targets. Normally, BFVs are not used as assault weapons. Move the BFVs far enough behind the leading element to gain a degree of protection, yet *far enough forward to provide antiarmor support quickly for leading elements.* (See Figure 3-20.)

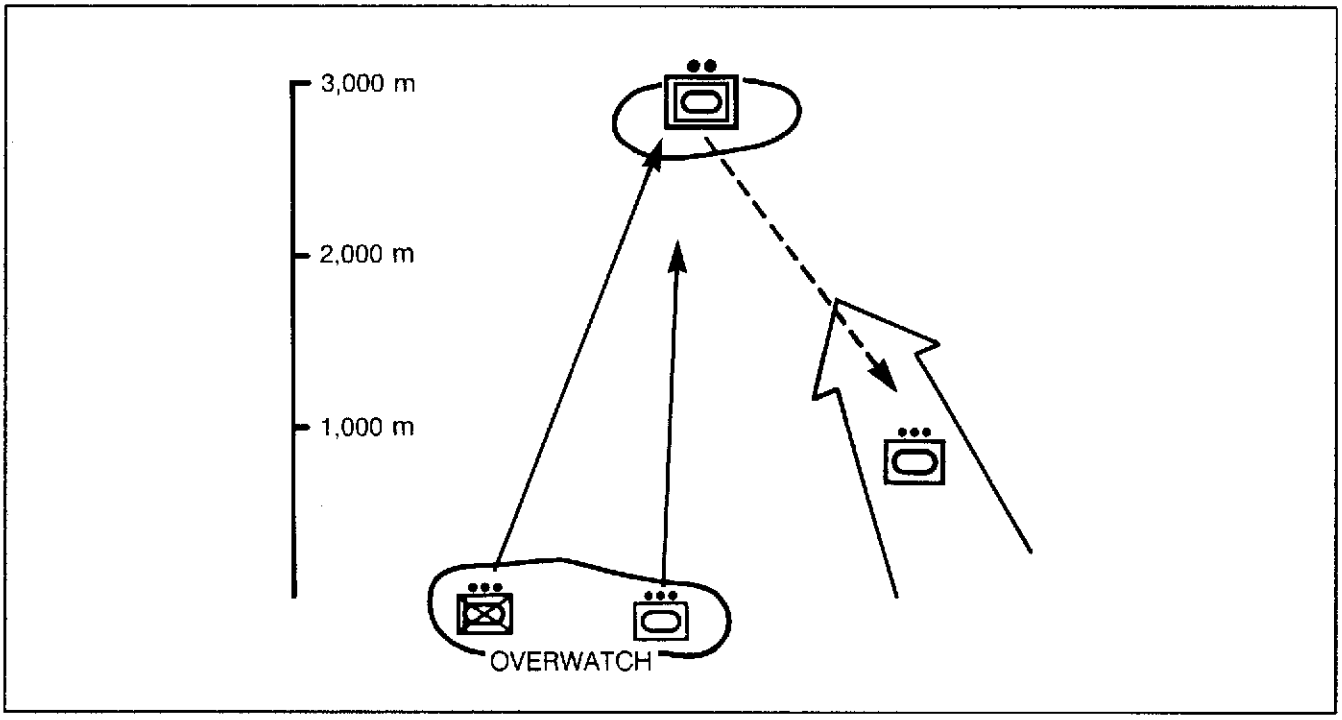


Figure 3-20. BFV in Overwatch.

The Dragon

The Dragon provides additional antiarmor fire for infantry platoons. It gives the infantry platoon an ability to defeat enemy armor, fortifications, and weapon positions when tank and TOW-missile fires are not available. The weight and bulk of the Dragon limit the number of rounds carried forward when dismounted. The Dragon's role is secondary to that of the tank and TOW missile. Dragons and light antitank weapons (LAW) supplement these fires as necessary. Dragons normally accompany a dismounted maneuver element to destroy targets that cannot be engaged by overwatching tanks, TOW missiles, and BFVs.

The LAW

The LAW is issued as a round of ammunition. Because of the light weight, ease of use, and expendability of the launcher after firing, it is a good weapon for dismounted infantry. The LAW is the best infantry antitank weapon at ranges less than 100 meters; TOW missiles and Dragons have a minimum arming distance of 65 meters.

Fire Control

Basic rules for controlling fires include:

- Engage the enemy as rapidly as possible.
- Expose only the weapons actually firing.
- Distribute fires to ensure complete coverage of enemy targets.
- Engage the most dangerous targets first.
- Maximize coordination of artillery with direct fires. (See Figure 3-21.)
- Avoid target overkill.

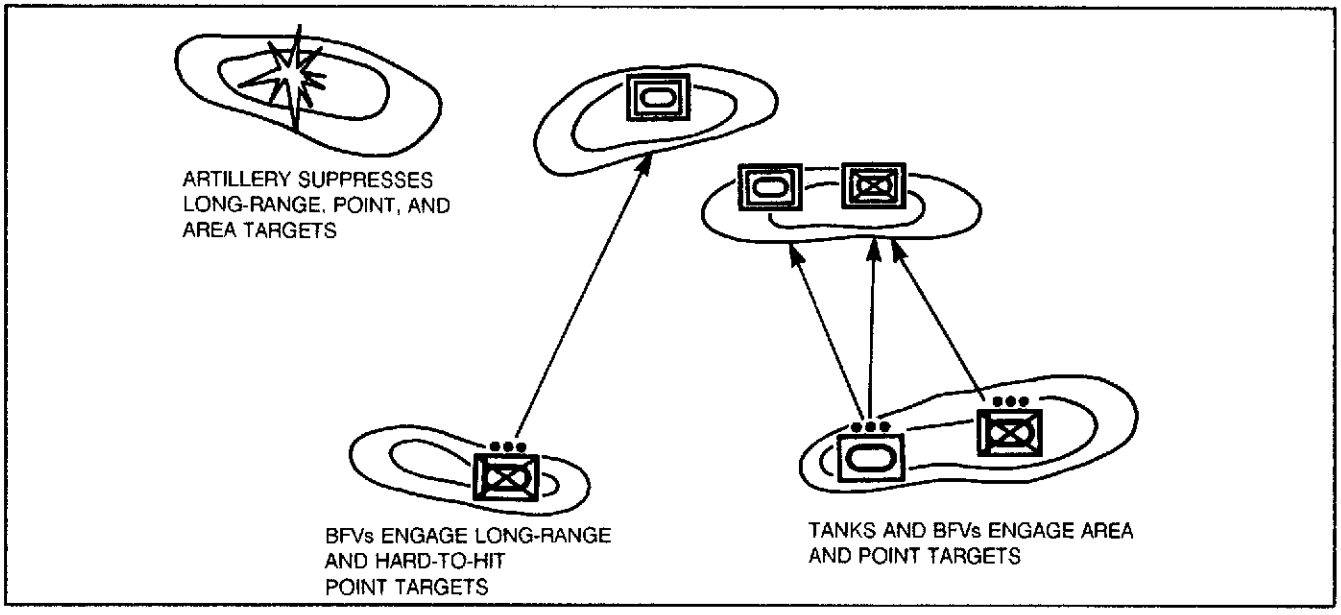

ARTILLERY SUPPRESSES LONG-RANGE, POINT, AND AREA TARGETS
BFVs ENGAGE LONG-RANGE AND HARD-TO-HIT POINT TARGETS
TANKS AND BFVs ENGAGE AREA AND POINT TARGETS

Figure 3-21. Maximize the Effectiveness of Weapon Systems.

AVOIDING ENEMY ANTIARMOR FIRES

Use all available cover and concealment. If the enemy cannot see you, it cannot mass fires to destroy you. Despite its obvious advantage, moving along covered and concealed routes costs you. Speed is reduced, control problems are increased, and the unit is more vulnerable to handheld and other short-range infantry weapons.

Never skyline or move directly forward from a defilade position. Avoid dusty terrain when possible; it betrays the movement of armored vehicles.

When crossing an open area, dismount personnel with binoculars and have them observe the area carefully for possible enemy positions before you emerge from cover. If enemy locations are identified or suspected, suppress or smoke them before crossing.

Cross open areas as fast as possible. Use rapid rushes from one covered position to another covered position. If you are exposed for less than 30 seconds, it will be extremely difficult for an enemy ATGM gunner to acquire, fire, track, and hit you at long range. Time to travel 1,000 meters is shown:

Speed	Time
20 kmph (12 mph)	3 minutes
25 kmph (15 mph)	2 minutes and 30 seconds
40 kmph (24 mph)	1 minute and 30 seconds
60 kmph (36 mph)	1 minute

In situations where use of covered routes would be too time-consuming, plan routes that have escape routes. (See Figure 3-22.)

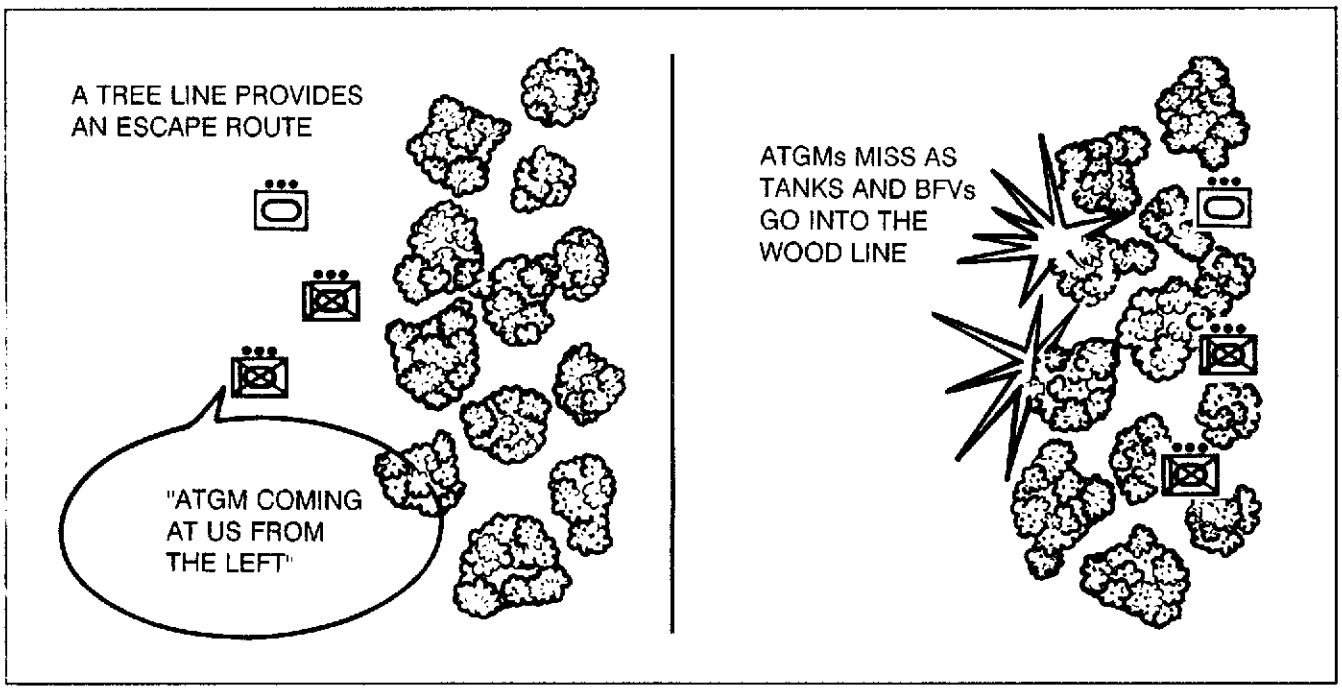


Figure 3-22. Company Team Using an Escape Route.

The enemy will use obstacles to canalize you into his kill zones and slow your progress. *Do not allow obstacles to push you into fire sacks.* When faced with the possibility of being canalized by obstacles, remember to avoid open areas that could place you in enemy kill zones. When extensive obstacles are expected, infantry and engineers should be located well forward with the assault forces.

Artillery and mortars are the best means of suppressing antiarmor weapons. Indirect-fire weapons have great flexibility in engaging targets and covering larger areas; they are also less exposed while firing and relatively easy to resupply. Place indirect fire on top of identified or suspected enemy positions. (See Figure 3-23.)

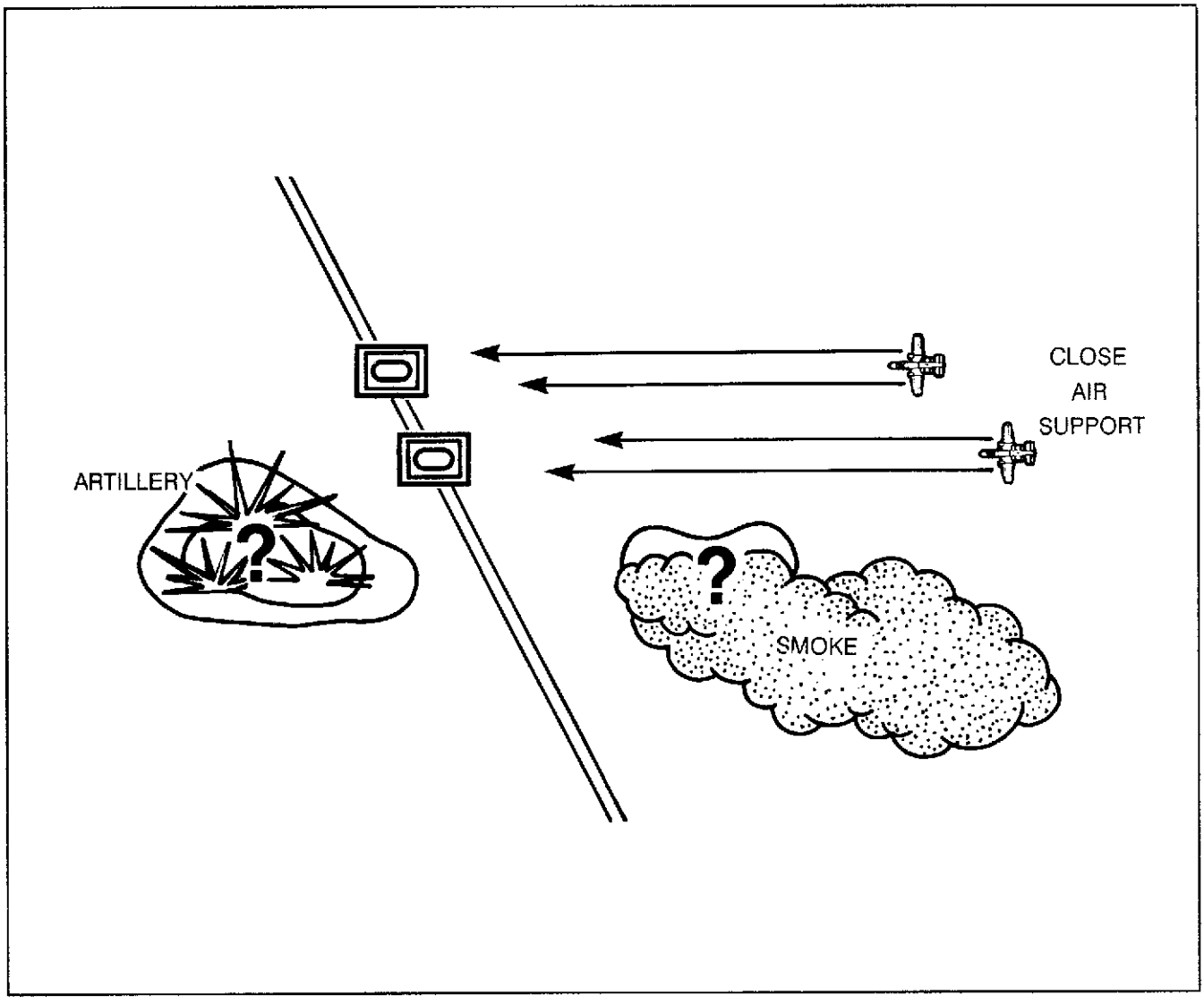


Figure 3-23. Indirect Fire Suppresses the Enemy.

When the enemy's position is not known, use smoke near the force to degrade enemy point fires. (See Figure 3-24.)

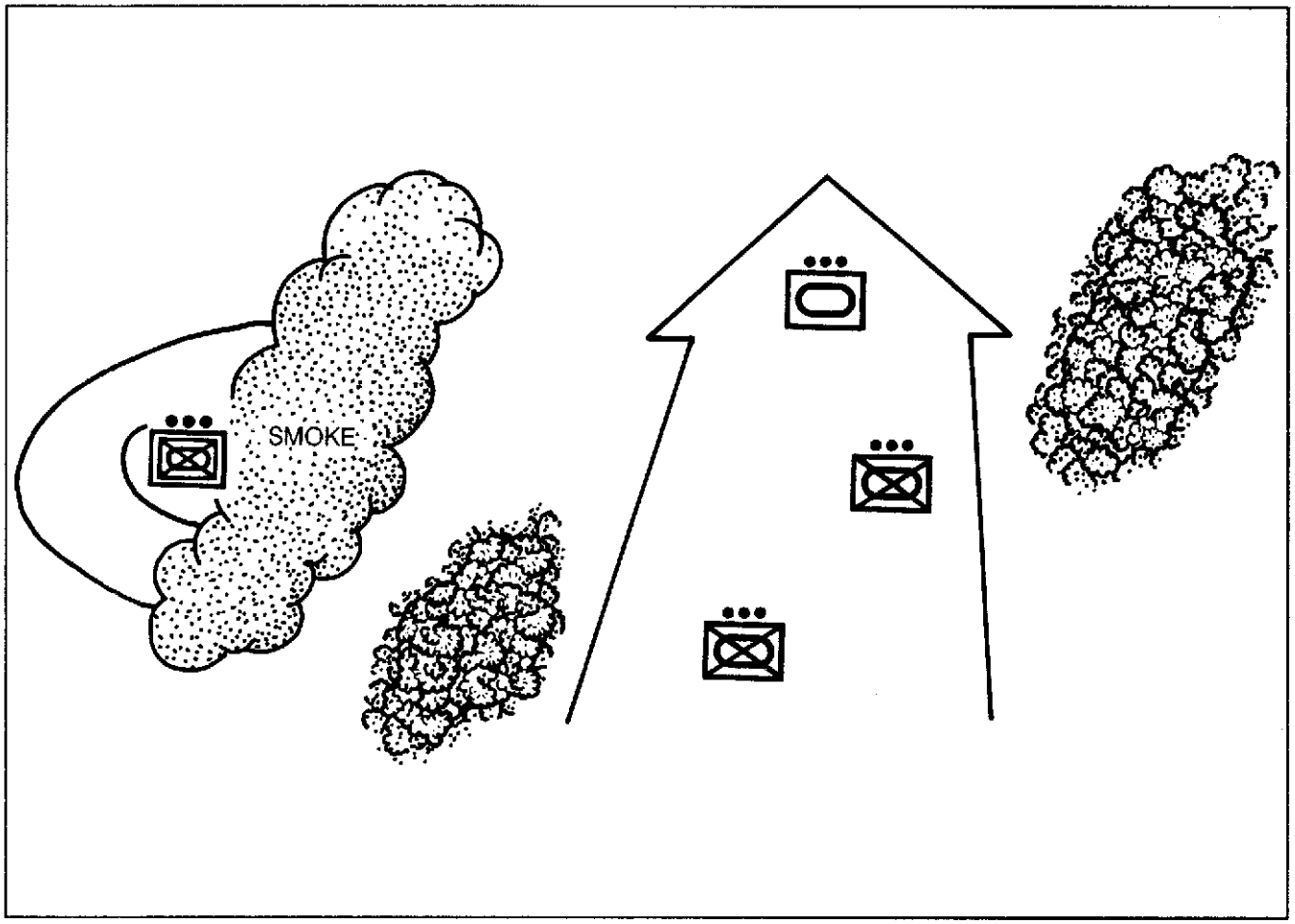


Figure 3-24. Smoke Obscures Enemy Gunner's Vision So Accurate, Continuous Tracking is Impossible.

Direct fires complement indirect fires to suppress enemy weapons. Strive to overwatch movements with direct fires for a variety of reasons. Direct fires are immediately available; even under ideal conditions, it will take two to three minutes to get indirect fires on target. By having direct-fire weapons overwatch, you can immediately suppress enemy fires. Direct antitank fires can destroy armored vehicles. Indirect fire weapons have only a limited ability to destroy armored vehicles.

It is difficult to place point fires into an area accurately when artillery is firing because of the dust and smoke generated by the artillery. However, obscuration can also degrade the ability to provide effective overwatching, suppressive fire. In general, use direct fires for destroying close-in and protected point targets; use artillery to suppress long-range point and area targets and to provide smoke to cover movement.

Section VIII. LIMITED VISIBILITY CONSIDERATIONS

Darkness, fog, heavy rain, and falling snow all limit visibility. Smoke and dust can temporarily limit visibility. Control, navigation, and identification of friendly and enemy troops are difficult when visibility is poor. Limited visibility attacks are the most difficult to execute. They require detailed planning, rehearsals, and thorough preparation. Movement is slower, confusion more likely, and reorganization much more difficult. Limited visibility attacks are conducted to–

- Achieve surprise.
- Avoid heavy losses.
- Exploit success and maintain momentum.
- Keep pressure on the enemy.
- Exploit the advantage of night-vision devices.

With slight modifications, techniques for night attack also apply to attacks when visibility is reduced by other conditions.

A night attack may be with or without illumination. Illumination is always planned. The attack may start without illumination and end with illumination. Normally, the task force commander decides which method to use and when to illuminate. Occasionally, when the tactical situation warrants, the company team commander could make this decision. Sources of illumination may be hand-fired flares, grenade launcher illumination rounds, artillery and mortar illumination rounds, or aircraft flares. Night sights and night-vision devices are used to aid movement and control.

The company team can conduct either a mounted or dismounted night attack. The attack is normally mounted to maintain the momentum of the attack against enemy forces occupying hastily prepared positions. A dismounted attack is usually conducted at night to achieve surprise.

A night attack by stealth requires detailed intelligence about the enemy. Preparations may take several days. Sometimes the attack can be made by stealth to a point and then illumination used the rest of the way. For example, there may be obstacles to the front of enemy positions that can be cleared or breached before using illumination. Suppressive fire is placed on the enemy to cover breaching operations. Illumination is used as needed.

Control of platoons and weapons is much more difficult at night. Strict light and noise discipline is required. Control measures are more restrictive when visibility is limited. Consider the following when planning a limited visibility attack:

- Assembly area is smaller and closer to the LD than for a daylight attack.
- Attack position is routinely used for a night attack. It is preferred in defilade, easy to enter and exit, and usually the last available covered and concealed position.
- LD is same as used in daylight.
- Point of departure (PD) is place where the company team crosses the LD. The company team will normally cross using the traveling technique. There may be more than one PD. The PD used should be easy to identify. If necessary, guides should be posted to help with control.

- RP is the place where control is released during a dismounted night attack. (Each company team commander releases control of his infantry platoons to the platoon leaders at the platoon RP. Each platoon leader releases control of his squads to the squad leaders at the squad RP.) RPs are far enough back to let units deploy before they reach the probable line of deployment (PLD).
- Direction of attack is same as used in daylight.
- Axis of advance is same as used in daylight.
- Route from the company team RP or assembly area to the platoon RP is normally chosen by the company team commander during a dismounted night attack. Each platoon leader picks the route from the platoon to the squad RP. Guides may be used to help in the movement from the RP to the PLD.
- PLD is the place from which the company team conducts the assault if enemy contact has not already been made. It should be as close to the objective as possible on an easily identifiable terrain feature (road, trail, or woodline).
- Objectives are the same as used in daylight.
- Limit of advance helps control the attack and prevent assaulting elements from being hit by friendly fires (fratricides). It is established by the battalion task force commander or the company team commander. This limit should be easy to recognize during limited visibility. It should be far enough beyond and to the flanks of the objective to give security elements space to perform their mission. FSEs can engage enemy forces beyond this line without clearance from the supported unit.

The company team commander decides what the company team formation will be and whether tanks or infantry will lead. Each platoon's formation depends on its position in the company team formation, the terrain, and the enemy situation.

The company team may cross the LD in column with platoons in column when—

- Visibility does not permit any other formation.
- Distance to the objective is great.
- Early contact with the enemy is not expected.

If the company team is in contact with the enemy and the distance to the objective is short, the LD may be the PLD. In this case, the company team crosses the LD/PLD on line, with the platoons also on line.

The distance between platoons is based on visibility, terrain, and any other factors that affect control. When visibility is poor, move either by traveling or traveling overwatch. Bounding overwatch is difficult at night, even with the help of night-vision devices.

Both indirect and direct fires are planned as in a daylight attack. If the emphasis is on stealth, however, these fires are not delivered until the company team is ready to assault or is discovered by the enemy. Some weapons may fire before the attack and keep up a pattern to deceive the enemy or to help cover the company team's movement with noise. This will not be done if it discloses the attack.

Indirect fire is more difficult to adjust when visibility is poor. If doubt exists about the exact locations of friendly troops, plan indirect fire at enemy positions beyond the objective and then walk them onto the

objective. Illumination rounds fired to burn on the ground will mark objectives and keep the company team oriented.

Plan smoke to further degrade the enemy's observation, but not to restrict friendly movement or hinder the breaching of enemy obstacles. Smoke is not used on the objective during assault because it would obscure enemy positions.

Always plan illumination for a night attack. Then, if you need it, you will have it. The task force commander normally controls illumination but can authorize a company team commander to call for it when needed. The illumination should not be called for until the assault begins or an attack is detected. Place illumination on several locations over a wide area to confuse the enemy as to the exact place of the attack. Place it beyond the objective to help assaulting elements see and fire at withdrawing or counterattacking enemy troops. Once used, illumination must be continuous because attacking elements will have temporarily lost their night vision. Any break in illumination may also reduce the effectiveness of suppressive fire. Squad, section, and platoon leaders do not use hand flares before the commander has decided to illuminate the objective.

In severely reduced visibility, stabilized guns of tanks and BFVs may be used as navigational aids. Point the guns on a predetermined azimuth before movement and turn on the stabilization system. As the vehicle moves, the gun always points in the same direction. The driver needs only to follow the gun tube for the remainder of the route.

Consolidation at night presents special difficulties. It is very easy to miss enemy on or near the objective, especially if the objective is large. Dispersion between vehicles and soldiers must be less than in daylight to ensure mutual support. Leaders must physically check each fighting position (vehicle and soldier) and make sure observation posts (OP) are established. It is especially important to coordinate face-to-face on the tie-in of adjacent platoons and companies. Because of inherent difficulties, the exhaustion of team members, and the probability of enemy counterattack at first light, stand to is critical. The team must be awake; alert; and ready to adjust positions, recheck the objective, and defeat an enemy counterattack at first light.

One of the greatest dangers to a night attacker comes from friendly fires. It will help to improve gunner vehicle identification skills. Some techniques that can be used include –

- Coordinate laterally before and during the battle. Find out where units on the right and left will be, what formation they will be in, and their exact routes. Find out the same about the units to the front (normally the scouts) and the units to the rear (providing overwatch). Make sure they know the same about you. During movement, keep everyone informed of the location and any route changes or delays. Always watch for units getting ahead or behind and take appropriate action.
- Ensure understanding. Make sure all leaders know this information. Rehearse the attack over similar ground, at night if possible. Observe rehearsals of subordinates and conduct briefbacks with each key leader, including attachments.
- Tighten fire control. During night attacks, consider using weapons tight or even weapons hold, especially if friendly forces are to the front or in a known direction (such as weapons hold to the left, B company is attacking on our left).

Tank thermal sights and weapons stabilization are useful in night navigation. The vehicle commander and gunner can aid the driver by using the sights to observe the terrain and talk to the driver along the route.

Section IX. ASSAULT OF A FORTIFIED STRONGPOINT

The assault of a thoroughly prepared strongpoint is the most difficult offensive mission. Attacks against fortified areas and strongpoints are extremely costly in terms of time, equipment, and casualties and should be attempted only when there is no acceptable alternative.

Company teams generally do not assault fortified strongpoints alone. A fortified position is attacked by a combined arms assault force consisting of tanks, mechanized infantry, field artillery, engineers, and tactical air, when available. Special items of equipment and ammunition may be required. Attacks on fortified positions usually differ from other attacks in the following key aspects:

- In a dismounted infantry mission, tanks, BFVs, and other heavy supporting weapons fire from protected overwatch positions to cover the assaulting infantry.
- The actual assault is made by dismounted infantry. A properly prepared enemy fortified strongpoint or position will normally cause a mounted assault to be impractical.
- The METT-T analysis could cause the company team to task organize below the platoon level (for example, an infantry platoon with an engineer squad attached). Where terrain is restrictive, a tank section might be OPCON and fully integrated into the mechanized infantry platoon's mission. (This is an exception based on METT-T and not the rule.)

Tanks will still lead the mechanized infantry as close as possible to the objective.

The most obvious problem in overcoming a fortified strongpoint is overcoming the extensive obstacle belt(s) protecting it. Enemy obstacles, like our own, are usually covered by direct and indirect fires.

BASIC CONCEPTS FOR BREACHING OBSTACLES

Complex obstacles take time and engineer support to emplace. They are designed to block major avenues of approach and deny access to key terrain. Complex obstacles usually form part of an enemy strongpoint defensive position. Company teams breach complex obstacles as part of a deliberate task force operation. When approaching the enemy, you may encounter outer defensive obstacles (particularly mines) in the enemy security zone. Carefully decide, in stride, whether to bypass or to breach the obstacle. A bypass may lead into an enemy kill zone. A breaching operation may use more time and result in casualties.

If the obstacle is to be breached, the company team conducts a hasty (in stride) breach using the equipment on hand to maintain momentum, or it participates in a task force hasty or deliberate attack. Hasty breaching is better than forcing through an obstacle, but not as good as bypassing.

If the necessary equipment is not available, it may be necessary to force through the obstacle or move back to a hasty defensive position until a deliberate breaching operation can be started. Although not a desirable breaching method, you may have to bull through the obstacle to complete the mission. To do this, direct a vehicle or personnel to breach a lane. The most expeditious and least costly way to force a breach in a minefield is to use mine rollers and mine plows. Any solution is better than bogging down in front of an obstacle and enduring casualties from direct and indirect fires.

Reconnaissance will dictate whether to attempt a hasty breach with the mechanized company team or report the requirement for a task force deliberate breach. The determination of when the company team can effect a hasty breach and when the task force must organize a deliberate breach is a function of

METT-T. The more elaborate the defenses, the more organization, effort, and combat power is required to overcome them.

To conduct a hasty breach, the company team organizes internally to perform the same functions as the task force performs when conducting a deliberate breach. That is, the company supports the breach with suppressive fire, breaches the obstacle, and assaults through to the other side.

A successful hasty breach depends on speed and surprise to overcome the obstacle before the enemy can focus its defense to defeat you. Armored vehicles roll through and over wire obstacles without stopping. When wire and mines are integrated, grappling hooks can tear away the wire quickly, followed by mine plows and mine rollers to clear a path through the unexploded mines. Unless infiltrating an obstacle and breaching it by stealth, dismounting soldiers to breach obstacles is both risky and time-consuming.

While a hasty breach is occurring, the rest of the team deploys on the flanks, suppressing known or suspected enemy positions. Once the obstacle is breached, the team surges through, overwhelms the remaining enemy, and continues the offensive movement.

In the task force plan, the company team is usually required only to perform one of the three major missions: support force, breaching force, or assault force. (FC 90-13 provides additional information on counterobstacle operations.)

THE SUPPORT FORCE

The support force leads in the movement to the obstacle. The essential capability of the support force is effective, long-range, direct-fire suppression of enemy defensive positions. The support force is tank-heavy and includes available antitank units, the mortar platoon, and air defense weapons.

The support force forms the base of fire for the breaching operation, overwatches other elements, and gains fire superiority over enemy direct-fire weapons. It also provides air defense coverage using attached air defense weapons and its own small arms and automatic weapons. If the support force cannot do these things, the obstacle breach will fail.

THE BREACHING FORCE

The breaching force follows the support force to the obstacle. It passes around or through the overwatch position and begins to clear a lane through the obstacle. The essential capability of the breaching force is the reduction or removal of obstacles. The breaching force is engineer and infantry heavy. It includes all available specialized breaching equipment such as combat engineer vehicles (CEV), armored vehicle launched bridges (AVLB), mine-clearing line charges (MICLIC), mine plows, and mine rollers. (See Chapter 6 for a description of engineer equipment and capabilities.)

The breaching force cuts through the obstacle and opens lanes in each successive layer of the obstacle. Minefields are breached using the equipment available, beginning with the line charge to detonate mines. The mine roller proofs the passage for the assault force. CEVs and AVLBs are used when necessary to destroy obstructions and bridge gaps or ditches. The breaching force operates under obscuration to maintain the momentum of the attack. When necessary, the breaching force may follow and reinforce the assault force.

THE ASSAULT FORCE

The assault force follows the breach force when moving to an obstacle. The assault force must be able to move rapidly through the obstacle on the lanes created by the breach force. The assault force then

attacks to destroy enemy forces defending the obstacle. It continues the attack to either expand the lodgement and roll up the enemy flanks or pushes on deep into the enemy rear, depending on its mission. The primary requirements for an assault force are mobility and firepower. The composition of the assault force depends on the nature of the enemy defense and the terrain. It is infantry-heavy when assaulting an enemy strongpoint, tank-heavy when facing a mobile enemy defense.

ASSAULT CROSSING OF OBSTACLES

Suppression

The support force suppresses enemy direct-fire defenses. It must be able to put direct fires on enemy positions and adjust suppressive fires and smoke from artillery and mortars. It must also provide air defense coverage in the assault crossing area. Its positions are normally under enemy observation, at least initially, and, therefore, receive enemy defensive fires. The support force takes up positions that leave the way clear for the breach and assault elements, yet allows its own mission to be accomplished. Ultimately, the support force will follow the other elements through the breach and rejoin the fight on the other side.

Obscuration

Smoke or natural obscuration is imperative when making an assault breach, unless enemy defenders are totally destroyed or are being suppressed by the support forces. Specialized engineer equipment, dismounted engineers, and infantry are extremely vulnerable to enemy direct and indirect fires preplanned on the obstacle. Although imperative to the successful breach of the obstacle, obscuration seriously complicates command and control during the effort. It tends to slow and confuse the separate elements of the breach force in addition to making direct fire from the support force difficult. Thorough training, preparation, and rehearsal can overcome these difficulties and permit the breaching force to maintain direction, cohesion, and momentum.

Security

Ideally, the obstacle is breached after securing the far or enemy side. Friendly forces can reach the far side of the obstacle by infiltration, bypass, air assault or minor breach. Elements on the far side of the obstacle are part of the support force, working for the breach force commander. They secure the exits of the breach and help suppress enemy fire. Usually, however, security must be provided by the fires of the support force alone operating on the friendly side of the obstacle.

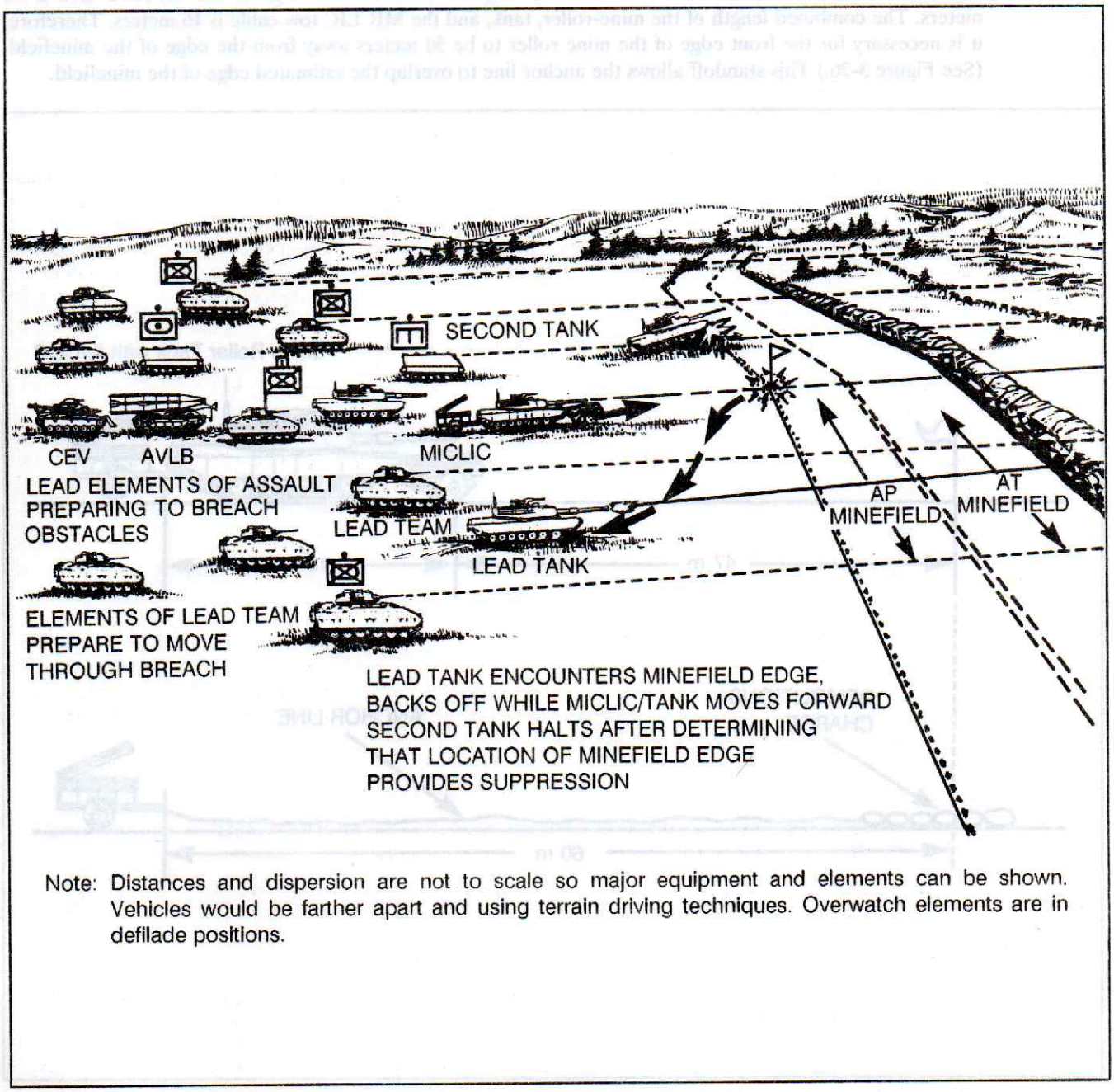
Reduction

Reduction of the obstacle is the most complicated part of the assault crossing. The breach force commander locates well forward to see the action and control events.

As the breaching force moves forward, obscuration and suppressive fires should be placed on the objective area and on the antitank ditch and berm. Shift the fires to the enemy fortifications and emplacements when the soldiers have breached the minefield(s). To clear the trenches and bunkers of defending enemy infantry, use variable-time (VT) and delay fuze settings.

In most cases, one of the platoon leaders will control the mine-roller and plow tanks from a close-in position. Two mine-roller tanks, moving in a vee formation with about 75-to 100-meter lateral dispersion, lead the initial columns of the breaching force. The third mine-roller tank, towing an M173 projected demolition charge or MICLIC, will follow centered and to the rear approximately 100 meters. The two forward mine-roller tanks check for an irregularly shaped minefield. The breach should occur at the narrowest part of the minefield to facilitate crossing. The mine-roller tank towing the MICLIC may carry

an engineer to help operate the line charge. The MICLIC mine-roller tank also acts as a backup in case one of the lead mine-roller tanks is halted. Each of the mine-roller tanks will carry a distinctive pole and marker (flag or pennant) to use to mark the forward edge of the minefield. (See Figure 3-25.)



Note: Distances and dispersion are not to scale so major equipment and elements can be shown. Vehicles would be farther apart and using terrain driving techniques. Overwatch elements are in defilade positions.

Figure 3-25. Mine-Roller Tanks Locating Minefield.

When the mine-roller tanks have found the edge of the minefield, the mine-roller tank with the line charge will move forward. The first two mine-roller tanks back up 5-1/2 tank lengths (approximately 50 meters). The mine-roller tank with the MICLIC moves on line 50 to 60 meters from the edge of the minefield. The length of the anchor line connecting the demolitions charge to the MICLIC sled is 64 meters. The combined length of the mine-roller, tank, and the MICLIC tow cable is 16 meters. Therefore, it is necessary for the front edge of the mine roller to be 50 meters away from the edge of the minefield. (See Figure 3-26.) This standoff allows the anchor line to overlap the estimated edge of the minefield.

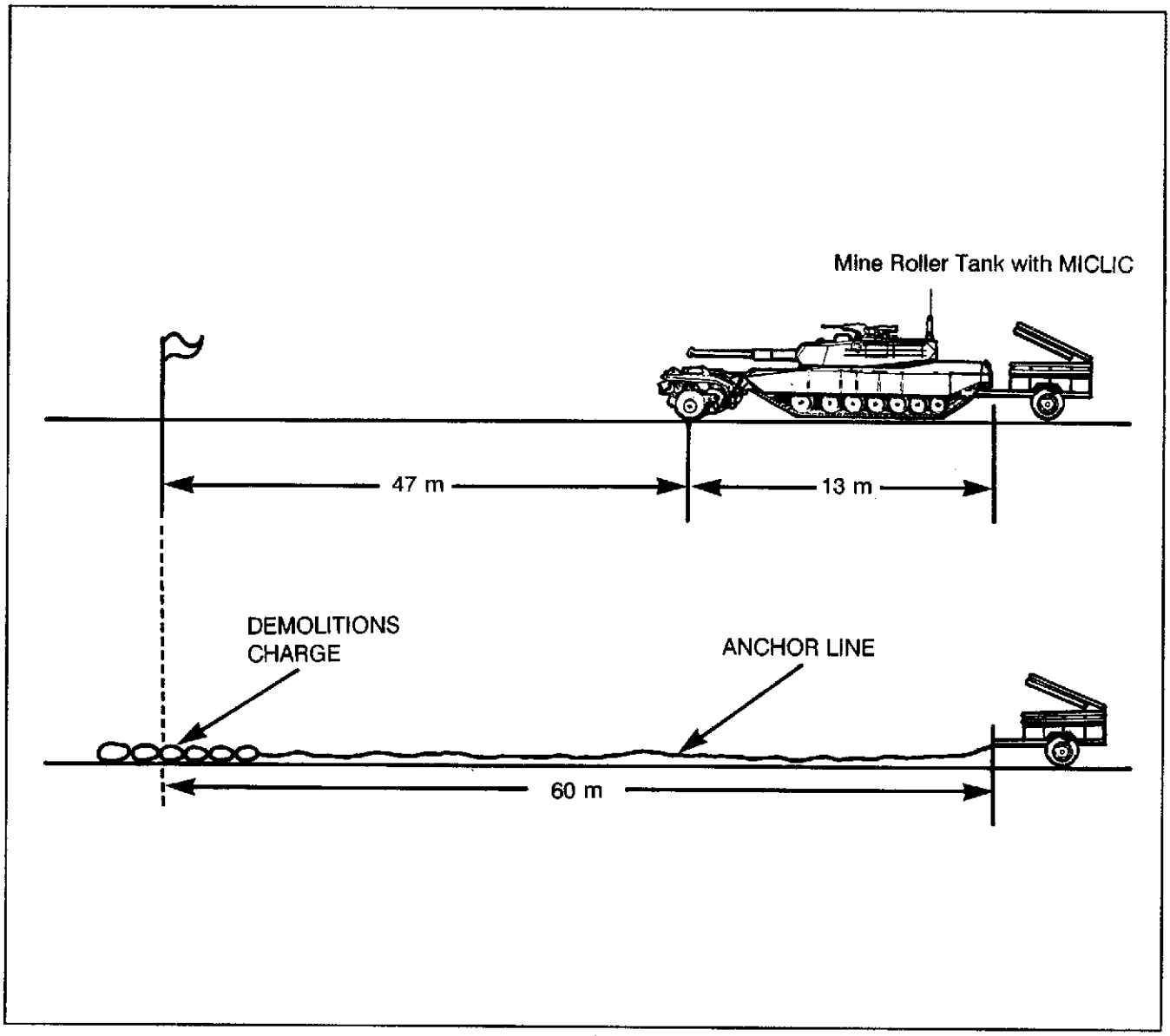


Figure 3-26. Mine-roller Tank with MICLIC.

When the mine-roller tank pulling the MICLIC demolition charge is in place, the loader fires (from inside the tank) the MICLIC charge. The demolition charge is detonated, creating a gap 8 meters by 100 meters.

Since the flight paths of the line charges are erratic, a second projected demolition charge is not normally used to further breaching. Instead, the mine-roller tanks continue from the end of the existing breached area forward after proofing the line charge breach lane. The mine-roller tanks follow a staggered path so one of the rollers on the second tank moves in a path between that of the rollers on the first tank. This procedure does not guarantee destruction of all the mines (the rollers will not cover all the ground between the lead tank's tracks). The area rolled, however, will allow relatively safe passage of other vehicles, such as BFVs, that are not as wide as tanks. Engineers will be required to manually clear this area after the other vehicles have passed.

If there is an antitank ditch, the mine-roller tank(s) move forward making sure a path is cleared all the way to the edge of the ditch. The platoon leader remains at the entrance of the minefield providing overwatch. Mine plows immediately assume the mission of the mine-roller tank(s) if it is knocked out.

While the mine-roller tanks (or mine plows) are proofing the path through the minefield to the antitank ditch, the engineers move behind them to mark the edges of the breach. The engineers move to the edge of the antitank ditch on the path cleared by the tanks, check for booby traps, and assist in providing suppression on the berm.

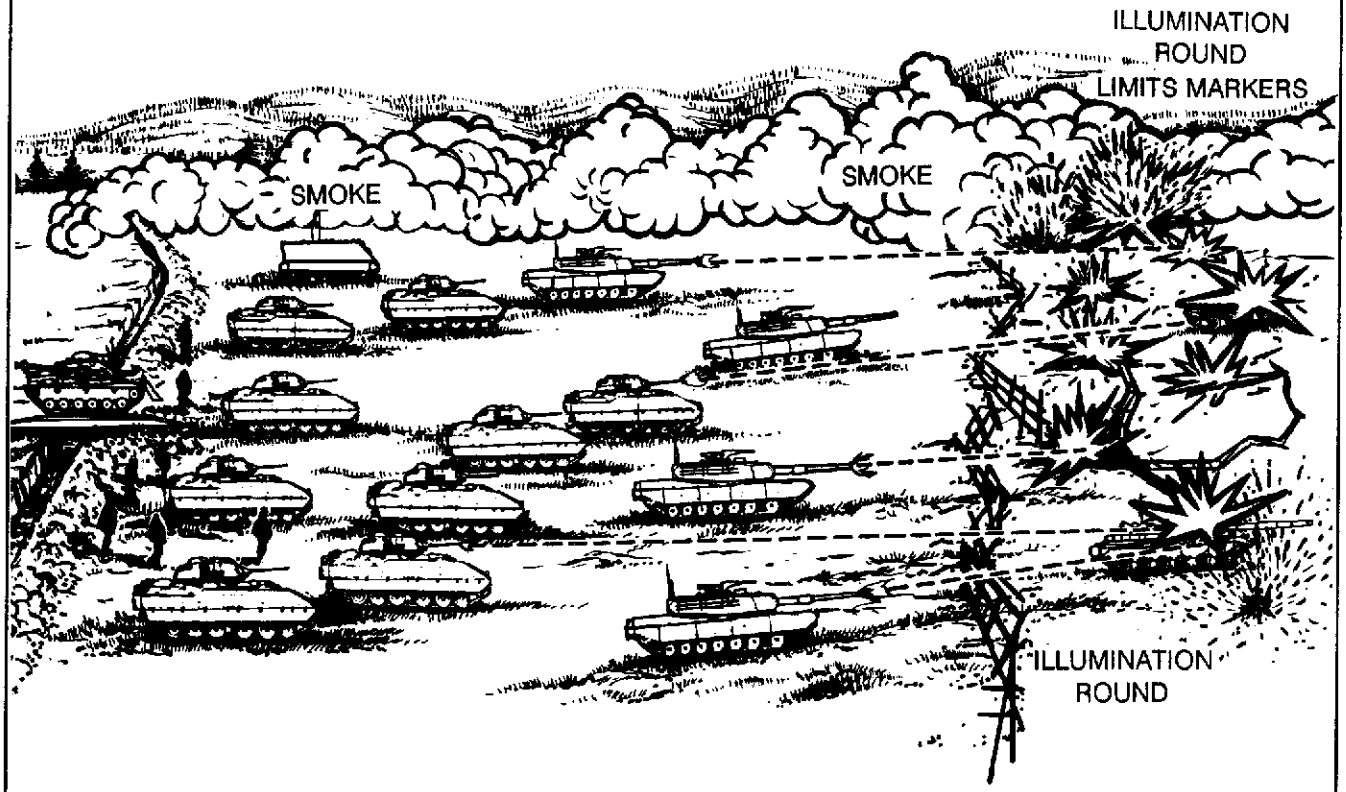
While the tanks and engineers are negotiating the minefield, move to a position to control and, if necessary, lead an assault against initial enemy security positions. This position is situation-dependent; however, it should be close to the breach site (200 to 300 meters). The team commander is responsible for traffic flow into the area around the breach site and must make sure a build-up does not occur and that vehicles and personnel enter and exit the area swiftly without stopping. Vehicles and personnel remain dispersed to prevent becoming lucrative targets for massed fires.

As soon as the engineers begin movement into the minefield, the lead infantry platoon follows them. Initially, one mounted squad and the platoon leader remain at the entrance to the minefield breach to provide overwatching fires. Two infantry squad vehicles then move to a location behind the engineers and dismount their rifle teams. Rifle teams move across the antitank ditch and clear the berm to the sides of the proposed crossing site. The squad vehicles pull back behind the roller tanks.

While the crossing site area is being cleared of enemy infantry, the AVLB is signaled forward and directed into position by the engineer leader. The bridge is emplaced and the AVLB launcher withdraws completely out of the minefield.

The overwatching rifle team that remained at the entrance to the breach now moves, on foot, through the minefield breach to the crossing site to assist in securing the berm.

The first vehicle to cross to the other side is a mine-roller tank followed by the platoon leader's tank, which immediately engages any targets identified by the infantry securing the crossing site on the antitank ditch berm. (See Figure 3-27.) Infantry platoons not involved in securing the berm cross the ditch and move directly toward their dismount point. BFVs are firing with 25-mm chain-gun and coaxial machine-gun fire to destroy enemy security positions and secure the far side of the breach. As soon as possible, they are reinforced by the platoon that secured the berm. Should the mine-roller tank leading the assault group on the far side of the antitank ditch encounter another antitank minefield, it continues to breach a gap in the newly discovered minefield.



Note: Distances and dispersion are not to scale so major equipment and elements can be shown. Smoke obscuration would be placed directly on enemy defensive positions. (See commander's tactical scheme.) All obscuration is not shown so the reader can identify locations and elements.

Figure 3-27. Breaching Force Moving Through Breach Into Assault of Security Positions.

The CEV is also called forward by the engineer platoon leader to demolish log cribs, abatis, and similar obstacles. If this is not needed, the dozer blade is employed to backfill the ditch adjacent to the bridge. Once this is accomplished, it moves to any additional lanes breached by the engineers and fills the ditch at those locations.

The soldier in charge of the lane through the minefield (usually the battalion XO) ensures the steady flow of traffic through the breach site by positioning himself so he can observe and control actions at the site.

ASSAULT OF THE ENEMY TRENCH LINE

Often a complex obstacle protects an enemy strongpoint. The reduction of a strongpoint is time-consuming and costly and undertaken only when there is no alternative. Once through the obstacle, the assault on the strongpoint continues. This is the mission of the assault force.

As the lead elements of the breach force close in on the enemy's security positions on the far side of the antitank ditch, the assault force crosses the breach site and moves through the breach force into the assault.

The assault force company commander accompanies the first infantry platoon in the assault on the fortifications. By being well forward, he can influence the battle and ensure all efforts are coordinated. Because of its signature as a command and control vehicle, the FIST vehicle remains on the near side of the breach until the platoons have all crossed. The company FSO will move where he is able to observe and adjust indirect fires on the objective. Artillery illumination rounds may be placed on the objective (in daylight or reduced visibility conditions) to help control the assaulting elements and to make sure they attack the proper objective. The illumination rounds provide an easily visible reference point on which to guide the fires. The objective may be bracketed with two or more illumination rounds, allowing for visual guides for each assault element to assist in accurate adjustment of indirect fires and placement of direct fires through battlefield obscuration.

Once the company has crossed to the far side of the antitank ditch and is moving on the objective, it prepares to breach the final set of obstacles in front of the main defensive fortifications. Tanks and infantry in BFVs move directly through or over the wire. The infantry remains mounted to preclude hitting antipersonnel mines emplaced directly in front of the enemy positions. Once over the close-in protective wire, infantrymen immediately dismount and begin the assault on the trenches. (The BFVs should move as close to the trench line as possible before the troops dismount).

Clearing the trenches and bunkers of the strongpoint is small-unit action conducted by teams, squads, sections, and platoons. Tanks suppress weapon positions and maneuver to prevent terrain or friendly troops from masking their fire. (See FM 7-7J and FM 17-15 for additional information on assault techniques.)

PREPARATION FOR A MARCH

Company Commander	Platoon Leader
Issue warning order as soon as notified by task force.	Issue warning order as soon as notified by company commander.
Inspect company maintenance, supplies, and general readiness for combat.	Check vehicle maintenance status, perform preventive maintenance checks and services (PMCS).
Study available maps and overlays.	Check weapons and ammunition, including personal weapons.
Brief XO, company FSO, first sergeant, platoon leaders, platoon sergeants, and administrative NCOs.	Check radios, flag sets, panels, flashlights, pyrotechnics, and other communication equipment.
Receive march order and strip map from task force. Dispatch quartering party as directed.	Check supply of fuel, lubricants, water, and rations.
	Check soldiers' personal equipment.
	Check stowage of equipment (load plans).
	Request maintenance section make needed vehicle repairs.
	Study available maps of route or area involved in next operation.
	Orient platoon personnel on the general situation as much as possible.
Issue company team march order.	Receive march order from company commander.
Check status of company trains and LOGPAC.	Issue platoon march order.
Establish contact with the unit preceding the company in the march column.	Establish liaison with preceding platoon in company march order.
	See that platoon area is policed and no equipment is abandoned.
Report to task force commander when company is ready to move out.	Report to company commander when platoon is ready to move out.
Move out to cross start point (SP) at time designated in task force march order.	Move out on order of company commander.

ON THE MARCH

Move at head of main body.	On tactical marches, move at head followed by wingman, then platoon sergeant's section.
If task force has ordered, report crossing (clearing) PLs.	If company commander has ordered, report crossing PLs.
Check company at irregular intervals for march discipline and march efficiency.	Maintain authorized rate of march and distances.
See that company follows designated route.	Observe platoon to see that – - Signals are relayed. - Security measures are observed. - Tank commanders (TC) are alert. - Vehicles passing the column are signaled when it is safe to pass. - Vehicles are signaled to bypass if one has mechanical difficulties.

Figure 3-28. Offensive Guide.

At halt, check company. - Receive platoon leader's status reports, and report company status to task force commander. - Coordinate company local security. - Report when company is ready to resume march.	Supervise platoon actions at halt. - Pull completely off the road. - Halt vehicles at normal intervals, under concealment if possible. - Post local security, both air and ground. - Perform PMCS. - Post ground guides to control traffic around halted vehicles. - Receive TC's vehicle status reports. - Report status of platoon to company commander. - Report platoon ready to resume march. At refueling halts, supervise resupply operations, prevent smoking.
At halts for mess, make certain all company personnel are fed.	At halts for mess, check to see that all OPs and ground guides are fed.
At unscheduled halts, check as far forward as the lead vehicle of preceding company for cause. Take any necessary corrective action.	At unscheduled halts, check as far forward as the lead vehicle of the preceding platoon to determine cause. Take any necessary corrective action.
Maintain radio watch on task force command net. Be alert for warnings of air or ground attack.	Maintain radio watch on company command net. Be alert for warnings of air or ground attack.
If warning is received, alert company.	If warning is received, alert platoon.
OCCUPATION OF ASSEMBLY AREA	
Meet quartering party guide at RP.	Contact guide at RP and follow him into platoon area.
Get company off the road immediately.	Get platoon off the road immediately.
Set up company CP.	
Check company area. Make any necessary adjustments between platoons.	Post vehicles within platoon area. Make necessary adjustments between vehicles and establish local security.
Receive platoon reports, consolidate, and report to task force commander by messenger or radio.	Receive TCs' reports on fuel, ammunition, personnel, and status of vehicles. Send two men to company CP with status report. One returns after delivering the report with any updated orders. The second remains as a runner.
Observe platoons for – - Movement into area. - Organization of area.	Supervise platoon; ensure that – - Vehicles are moving within area ground guides. - Vehicles are in positions so they can move without difficulty. - Vehicles are camouflaged properly. - Security measures are observed (foxholes dug, fields of fire assigned, light and traffic controlled, weapons manned, air guards posted, NBC monitored) as situation requires. - PMCS is performed. - Guides are designated to bring LOGPAC vehicles to platoon vehicles.
Coordinate company all-around local security. Establish all-around perimeter defense and contact adjacent units.	Inspect area.
Check camouflage and light and noise discipline.	Report to company commander with disposition sketch or overlay.
Inspect company area; order necessary improvements.	Supervise improvement of area.

Figure 3-28. (Continued.)

Receive and consolidate platoon leaders' personal reports.	
Give instructions for actions in case of attack.	Give instructions for actions in case of attack.
Report disposition sketch or overlay to task force.	
Supervise improvement of area. Lay telephone wire to platoons.	Connect platoon vehicles with telephone wire.
ASSEMBLY AREA PREPARATION FOR ATTACK	
Check readiness of company for combat.	Check readiness of platoon for combat.
When notified by higher commander, issue warning order to platoon leaders.	When notified by company commander, issue warning order to platoon.
Receive task force commander's order. Brief company FSO.	Receive company order.
Contact other company team commanders and coordinate security, communication, liaison, and joint reconnaissance.	Make personal reconnaissance with commander.
Direct platoon leaders to come forward to a prearranged place and receive the order.	Make estimate and plan; develop order.
If time permits, make personal reconnaissance on both map and ground.	When time permits, order TCs forward to see terrain and receive the platoon order.
Make estimate of the situation in coordination with other commanders, develop plan, and formulate order.	
Meet platoon leaders and issue order.	Issue platoon order.
Supervise any necessary attachments or detachments.	
Notify task force commander when ready to attack.	Notify company commander when ready to attack.
AT ATTACK POSITION	
Halt only if necessary to conduct final coordination and synchronization.	
Dispose company in its area, providing for cover, concealment, dispersion, and all-around security.	Dispose platoon as directed by company commander; establish local security.
Make final check of company.	Make final check of platoon.
If time permits, orient platoon leaders further.	Orient all personnel.
Report readiness to task force commander.	Report readiness to company commander.
Depart attack position and deploy into assault formation.	
DURING ATTACK	
Move company across line of departure at prescribed time in proper initial formation.	Move platoon across line of departure at prescribed time and in proper initial formation.
Move and control company attack, changing tactics and formation to meet changes in situation.	Move platoon to objective, using cover and concealment. Change tactics and formation as situation demands.
Control company fires.	Observe progress of platoon and other friendly units.
	Control platoon by radio, flags, prearranged visual signals, and personal example.
Request supporting fires on own initiative or request of platoon leader.	Control fire of platoon as situation demands or company commander directs.

Figure 3-28. (Continued.)

	Request and adjust supporting fires when needed.
Keep task force commander informed of situation and progress of company.	Keep company commander informed of situation and progress of platoon.
ON OBJECTIVE	
Occupy assigned objective.	Occupy platoon objective. Destroy enemy by fire.
Coordinate platoon dispositions to ensure all-around security and defense.	Position platoon to meet enemy counterattacks. Use cover. Secure good fields of fire. Establish OPs and local security.
Arrange for supporting fires through the company FSO.	
Reorganize company. Report status and disposition to task force commander.	Reorganize platoon. If necessary, refuel and resupply. Prepare to continue attack or defense. Report status and dispositions to company commander.
Check treatment and evacuation of personnel casualties and disabled vehicles.	Treat casualties and prepare for evacuation.
Make necessary reconnaissance. Issue necessary FRAGOs to continue mission.	

Figure 3-28. (Continued.)

This chapter implements QSTAG 567.

CHAPTER 4

DEFENSIVE OPERATIONS

The company team conducts defensive operations as part of a larger force. Defensive operations are conducted to—

- Destroy enemy forces.
- Defeat an enemy attack.
- Gain time.
- Concentrate forces elsewhere.
- Control key or decisive terrain.
- Wear down enemy forces prior to offensive operations.
- Retain strategic, operational, or tactical objectives.

Section I. FRAMEWORK OF THE DEFENSE

Defenses are organized into five complementary elements:

- Deep operations in the area forward of the *forward line of own troops* (FLOT).
- Security force operations forward and to the flanks of the defending force.
- Defensive operations in the main battle area.
- Reserve operations in support of the main defense.
- Rear operations to retain freedom of action in the rear area.

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The company team can participate in either area or mobile defenses. A mobile defense uses large reserves to counterattack and destroy or eject enemy forces. An area defense focuses on retaining terrain and destroying enemy forces by fire from mutually supporting positions. The company team may attack, defend, delay, or withdraw as part of the overall task force scheme of maneuver to accomplish the higher commander's intent. The company team executes the following defensive missions:

- Defend a battle position.
- Defend in sector.
- Defend a strongpoint.
- Reserve.
- Counterattack.
- Delay.
- Screen.
- Withdraw.

Section II. SOVIET OFFENSIVE TACTICS

OFFENSIVE PRINCIPLES

The following principles guide the Soviet tactical offensive operations:

- Mass. Victory is most easily and economically achieved by overwhelming the enemy with numbers.
- Momentum. Numbers with speed destroy an enemy quickly. Although losses may be high at first, quick collapse of the enemy makes the mass-speed combination more economical in the long run. Soviet forces will bypass significant resistance and reinforce success to increase momentum.
- Continuous combat. By applying mass continuously—night, day, bad weather, limited visibility—he expects to achieve and sustain momentum, overwhelm our forces, and destroy our ability and will to defend.

To achieve mass, momentum, and continuous combat, Soviet forces rely on intelligence provided by reconnaissance units. His reconnaissance will be the first enemy you see unless our security elements have destroyed them. Soviet reconnaissance forces are task-organized into reconnaissance groups and patrols:

- A reconnaissance group is a temporary tactical subunit formed from a reinforced platoon or company. Reconnaissance groups normally conduct reconnaissance by a combination of observation and fighting for information.
- A separate reconnaissance patrol is a temporary tactical subunit composed of a reinforced squad or platoon. A separate reconnaissance patrol accomplishes its mission by observation, but may use reconnaissance by fire to obtain information.
- A combat reconnaissance patrol is a small reinforced subunit used to gain information by causing the opposing force to react, revealing his dispositions, strength, and fire plan. This type of patrol conducts its reconnaissance by employing fire and maneuver against known or suspected opposing positions.

Soviet reconnaissance units generally seek to avoid sustained combat. They cross open areas at high speeds, using bounds to cross compartmented or broken terrain. At vantage points, observers dismount from their vehicles to get better observation. They may use feints and flanking maneuvers to try to determine your strength, composition, and disposition, and find a way to bypass your positions.

FORMATIONS USED BY THE SOVIET ARMY BEFORE AND DURING THE BATTLE

Soviet forces use three basic formations to conduct offensive operations: march, prebattle, and attack.

March formation normally consists of the following elements:

- Reconnaissance.
- Advance guard and forward security elements (see Figure 4-1).
- Flank security elements.
- Main body.
- Rear security element.

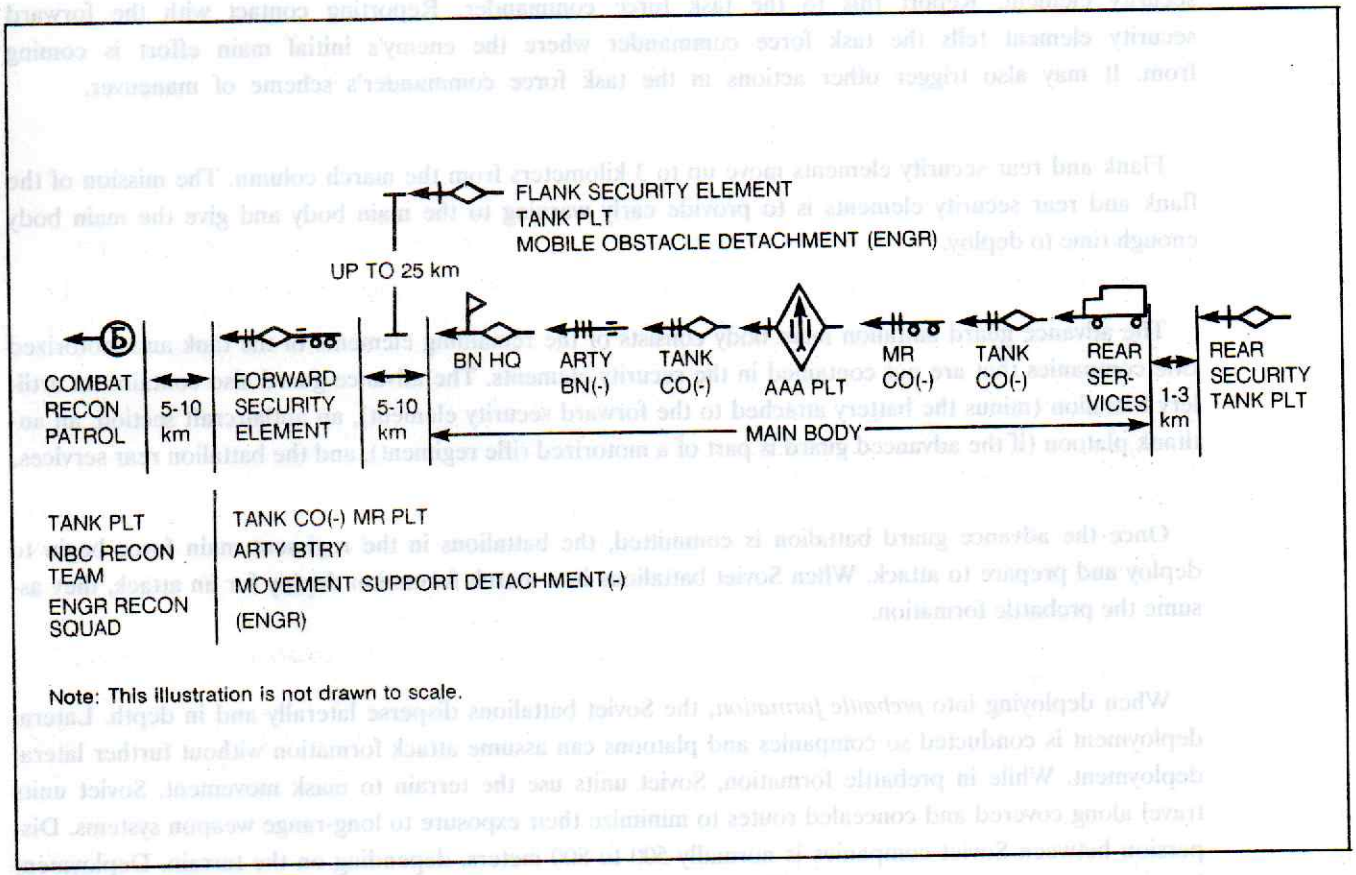


Figure 4-1. Soviet Tank Battalion(+) Deployed as an Advance Guard or Forward Detachment.

When moving as an advance guard, a Soviet battalion deploys a combat reconnaissance patrol ahead of its forward security element. The combat reconnaissance patrol's mission is to find the company teams's positions, the number and type of the company team's weapons, and the locations of the company team's obstacles. The combat reconnaissance patrol belongs to the lead company in the battalion. It normally consists of a tank or motorized rifle platoon reinforced with a chemical reconnaissance team and an engineer reconnaissance squad. The combat reconnaissance patrol moves 5 to 10 kilometers forward of the forward security element (forward of the forward edge of the battle area [FEBA]) when a meeting engagement is anticipated.

The next element in the battalion march formation is the forward security element. It normally consists of a reinforced company capable of fighting independently for a limited time. In addition to tanks and motorized rifle troops, the forward security element normally has an attached artillery battery, engineer platoon(-), chemical defense platoon(-), and possibly a mortar battery. When you can identify artillery and engineer vehicles, you have made contact with the forward security element. Report this to the task force commander. Reporting contact with the forward security element tells the task force commander where the enemy's initial main effort is coming from. It may also trigger other actions in the task force commander's scheme of maneuver.

Flank and rear security elements move up to 3 kilometers from the march column. The mission of the flank and rear security elements is to provide early warning to the main body and give the main body enough time to deploy.

The advance guard battalion main body consists of the remaining elements of the tank and motorized rifle companies that are not contained in the security elements. The advance guard also contains an artillery battalion (minus the battery attached to the forward security element), an antiaircraft section, an antitank platoon (if the advanced guard is part of a motorized rifle regiment), and the battalion rear services.

Once the advance guard battalion is committed, the battalions in the regiment main force begin to deploy and prepare to attack. When Soviet battalions in a march formation deploy for an attack, they assume the prebattle formation.

When deploying into *prebattle formation*, the Soviet battalions disperse laterally and in depth. Lateral deployment is conducted so companies and platoons can assume attack formation without further lateral deployment. While in prebattle formation, Soviet units use the terrain to mask movement. Soviet units travel along covered and concealed routes to minimize their exposure to long-range weapon systems. Dispersion between Soviet companies is normally 500 to 800 meters, depending on the terrain. Deployment into company columns is normally completed 4 to 6 kilometers from the opposing positions. (Figure 4-2 shows examples of typical Soviet battalion prebattle formations.)

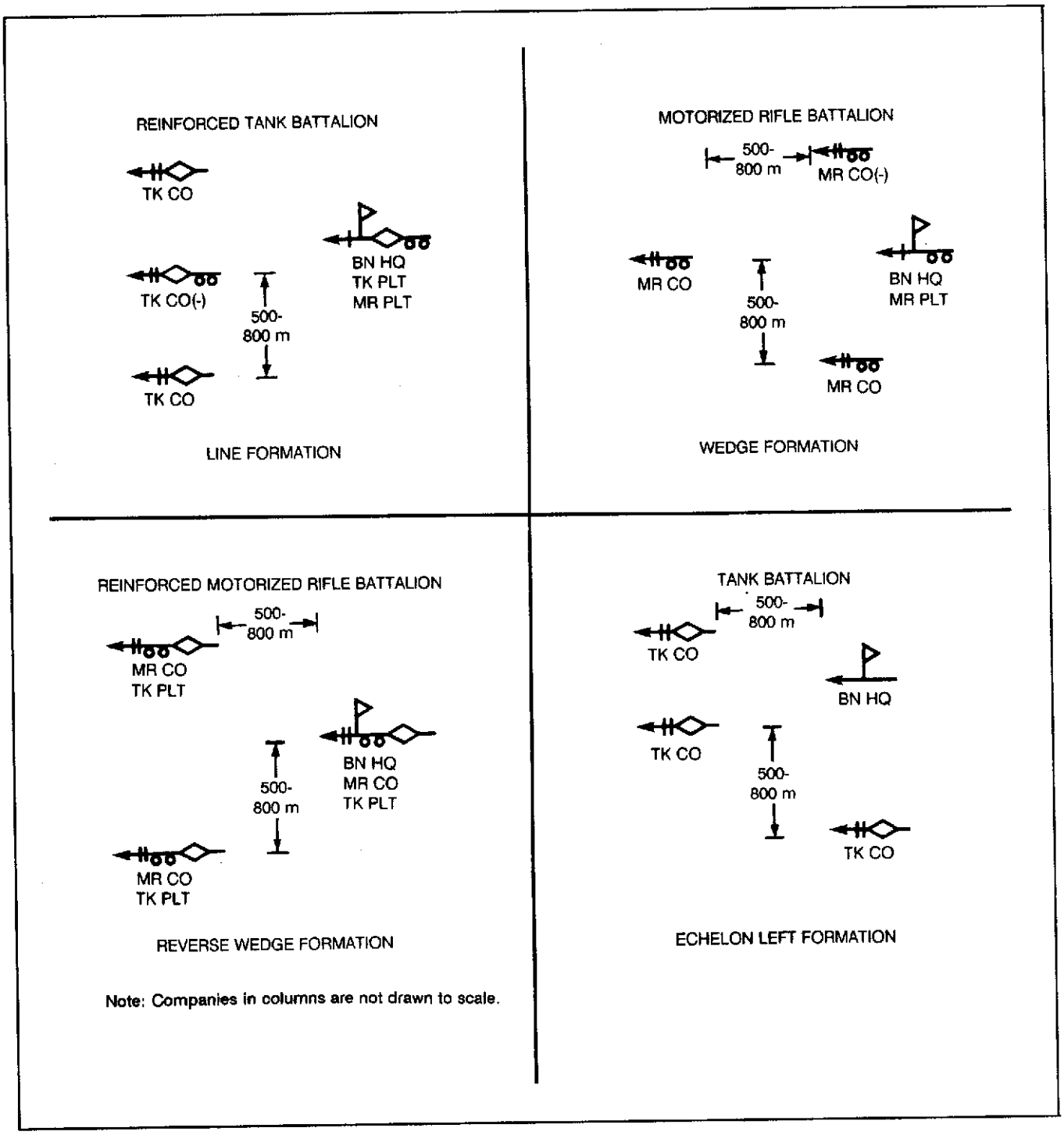


Figure 4-2. Soviet Battalion Prebattle Formations.

Soviet companies deploy into company columns initially, then form platoon columns. Company prebattle formations are shown in Figure 4-3. Companies deploy into platoon columns 1.5 to 4 kilometers from the opposing positions.

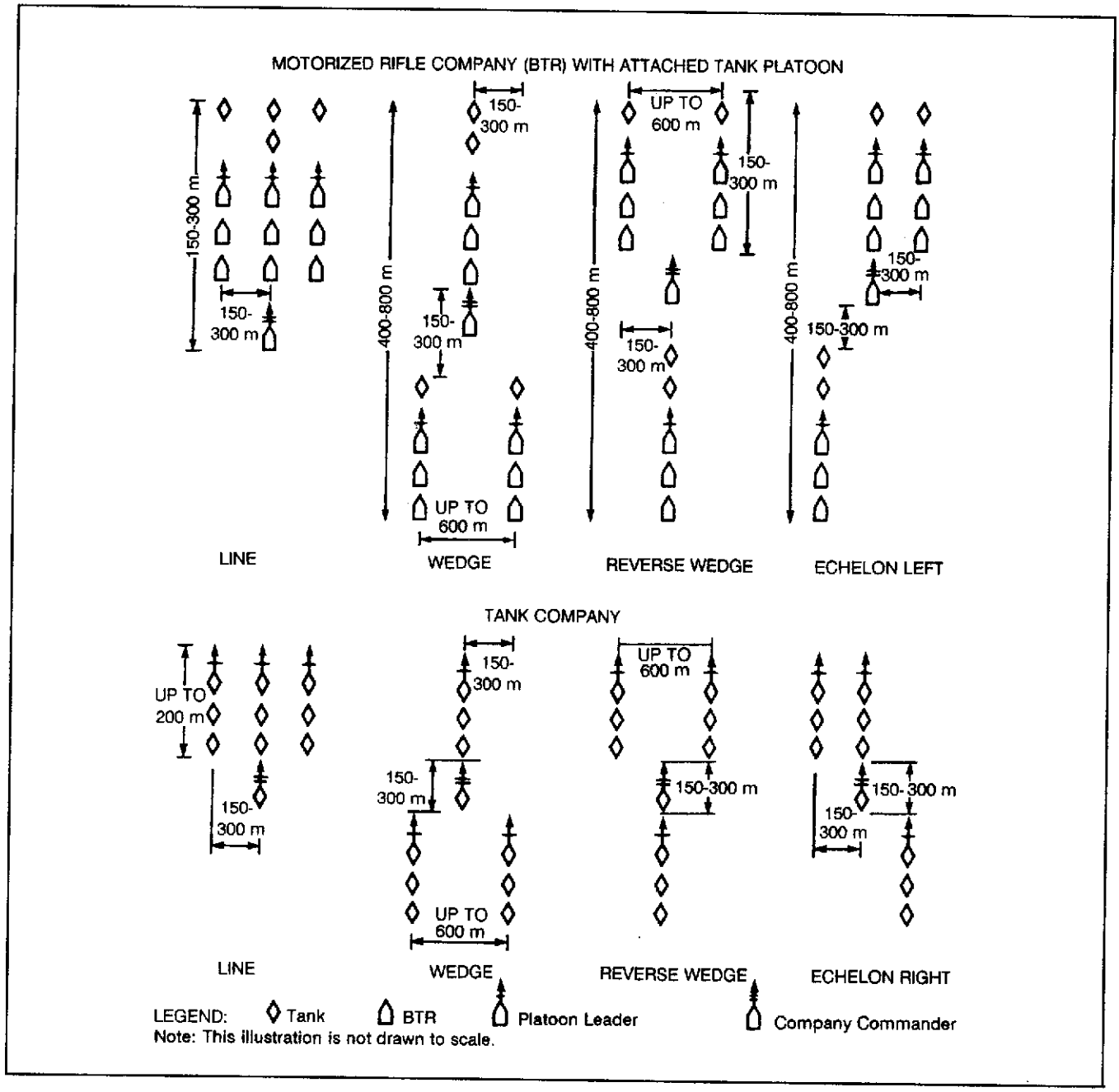


Figure 4-3. Soviet Company Prebattle Formations (Platoons in Column).

Attack formation is assumed 1,000 meters or less from opposing positions, depending on the terrain. Platoons disperse laterally into line formation. Figure 4-4 shows different company attack formations. Tank platoons lead, followed by BTRs and BMPs at a 100- to 400-meter distance. Motorized rifle platoon frontages are normally 100 to 200 meters. Tank platoons reinforcing a motorized rifle company may occupy up to a 400-meter frontage.

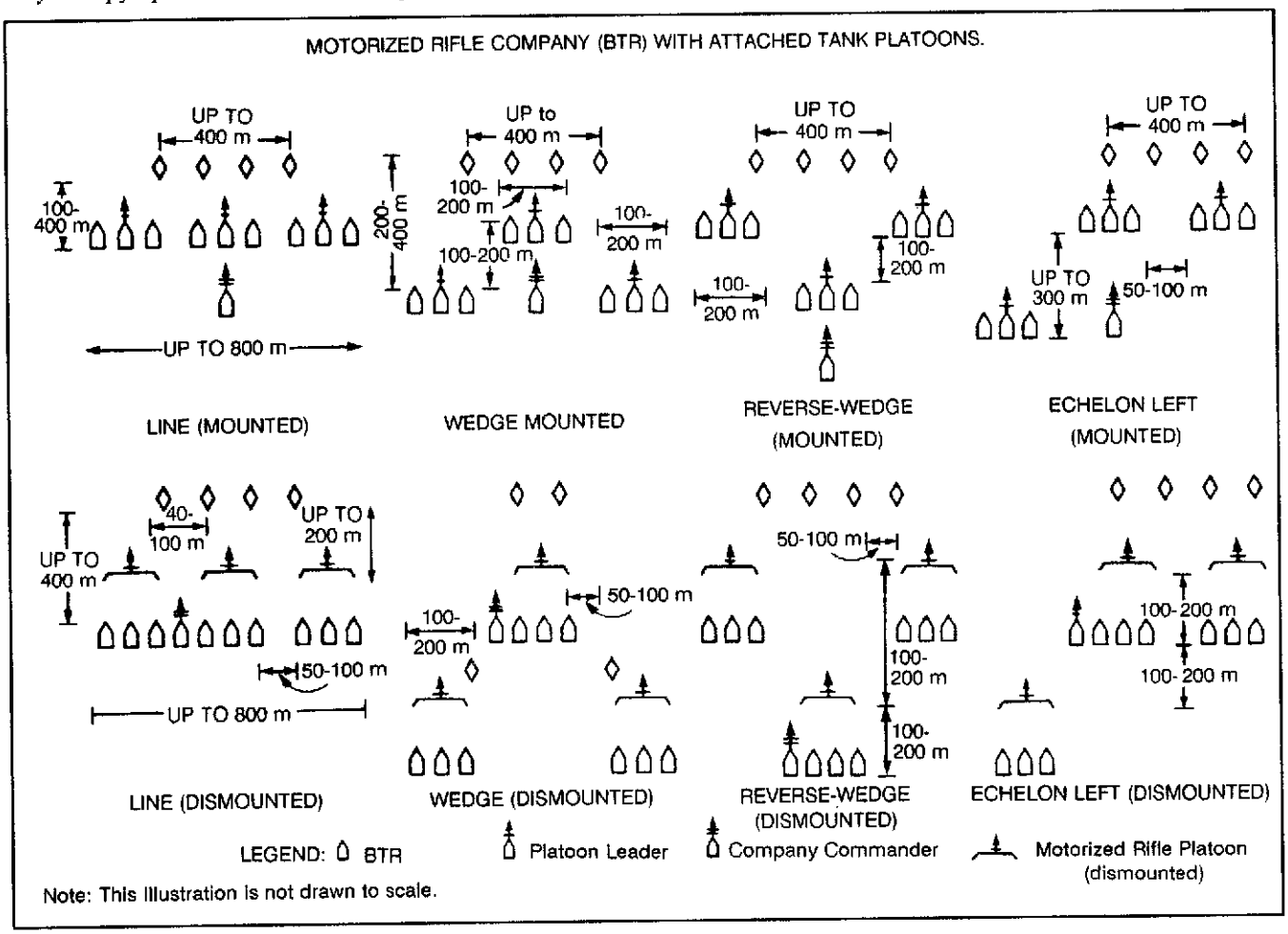
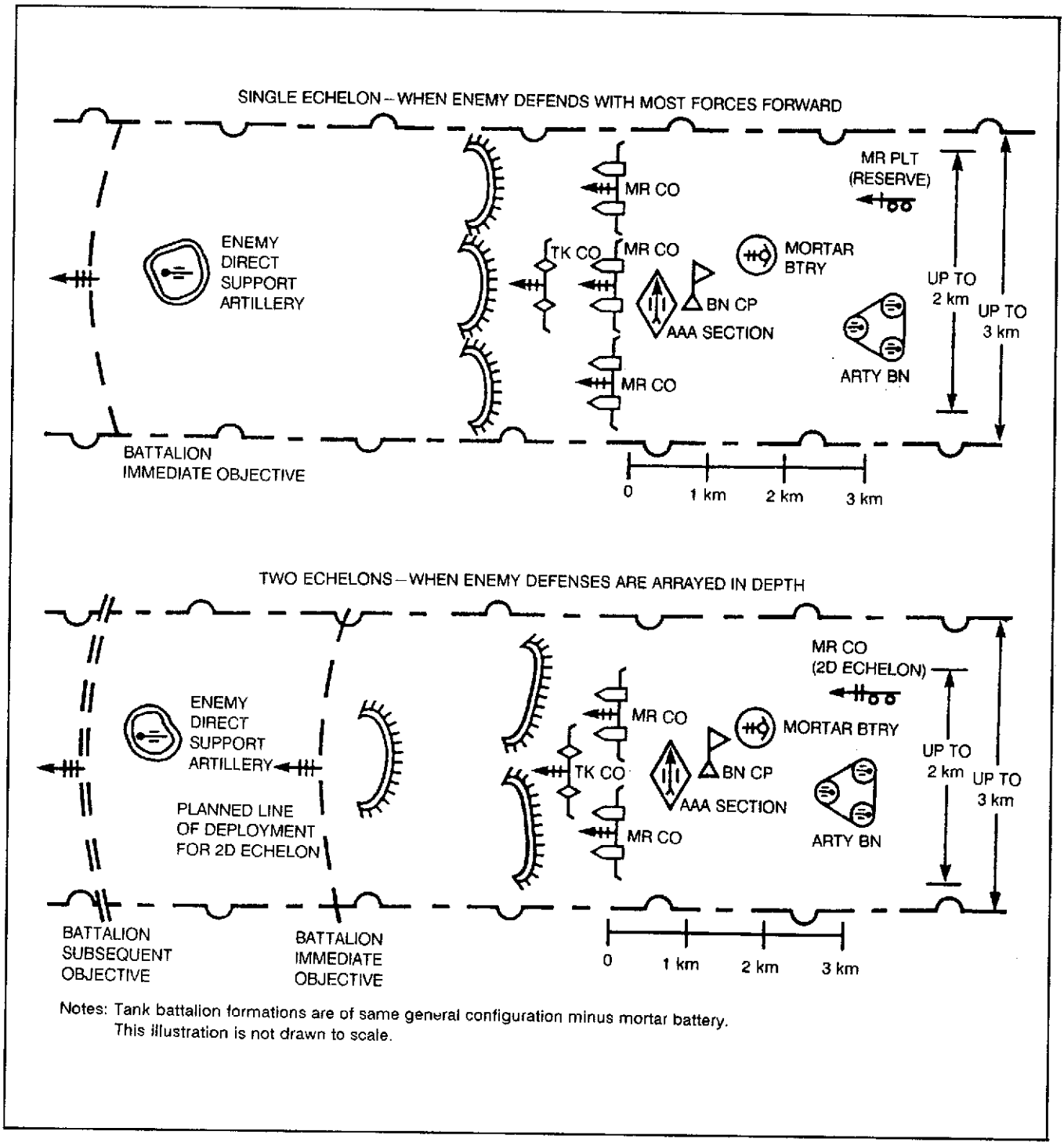


Figure 4-4. Soviet Company Attack Formations (Platoons in Line).

SOVIET ATTACK OF A DEFENDING ENEMY

Battalions attacking in the regimental first echelon normally have the mission to attack through defensive positions to continue the attack in an assigned direction. As shown in Figure 4-5, a battalion can attack with three reinforced companies in a single echelon, plus a small (platoon-size) reserve. It can also attack in two echelons, with 1 to 3 kilometers separating each echelon in depth. The overall battalion frontage ranges from 1 to 2 kilometers, with companies attacking on a 500- to 800-meter front.

If the Soviets cannot penetrate your defenses using frontal attacks, they will fix your position with the first-echelon companies and maneuver the second echelon or reserve against your flank. If this fails, the Soviet battalion will occupy hasty defensive positions.



Notes: Tank battalion formations are of same general configuration minus mortar battery.
This illustration is not drawn to scale.

Figure 4-5. Soviet Battalion Attack Against a Defending Enemy (MRB +).

CS for the battalion attack is provided by organic mortars, ATGM, and attached artillery, air defense, and engineers. Regimental antitank subunits are normally held back as an antitank reserve to react to counterattacks on the flanks of the line of attack.

An artillery battalion may be attached to a battalion attacking in the regimental first echelon. This artillery fires and displaces at the direction of the maneuver battalion commander and is often used in the direct-fire role.

First-echelon battalions may also have two to four self-propelled antiaircraft guns (ZSU) attached. The ZSUs follow about 400 meters behind the battalion first echelon, with 150 to 250 meters between vehicles. If you have attack helicopters or close air support, these are priority targets; otherwise, you can ignore these vehicles until more dangerous systems have been eliminated.

Attached engineers provide sappers and line charges to clear minefields. These troops normally ride in BTR-60 type vehicles, dismounting to clear and mark obstacles. Additionally, mine rollers and mine plows may be mounted on tanks to conduct breaches. Kill them first and you seriously reduce the enemy's ability to breach your obstacles.

Section III. PREPARING THE DEFENSE

DEFENSE FUNDAMENTALS

Depth

Position the platoons and the obstacles supporting them in depth. Depth allows you to absorb the attacker's initial blow and figure out what he is doing. It gives you the ability to develop the situation. Depth gives you time and space to maneuver and concentrate combat power at the right place and time.

Dispersion

Spread the platoons and individual vehicles as far apart as possible without losing the ability to concentrate firepower against the enemy. Dispersion makes it harder for the enemy to find and hit you, both with direct fire and with the masses of Soviet artillery.

Security

There are many ways to protect the team from being found or attacked by surprise. Some are passive, others are active; all must be considered in the defensive plan. A few examples of passive and active security measures are shown in Figure 4-6.

PASSIVE	ACTIVE
Disperse vehicles and platoons.	Establish OPs.
Use camouflage, concealment, and cover.	Perform mounted and dismounted patrols.
Impose radio-listening silence.	Emplace platoon early warning devices.
Turn engines off and keep them cold.	Deploy M8 chemical alarm nets.
Reduce noise.	Position GSR posts.
Do not move around in positions.	
Use no lights.	
Keep antennas tied down.	
Use hide or deflilade positions.	
Do not position in likely artillery target areas.	

Figure 4-6. Passive and Active Security Measures.

Terrain Sense

Terrain appreciation is one of the most important parts of any military operation. Study the terrain. Analyze how the terrain can help you defeat the enemy. If possible, reconnoiter the terrain from your view and the enemy's view. Know what the terrain will allow you to do, and what the enemy can do. Know where the terrain will slow the enemy down or force him into tight column formations. Find the best covered and concealed positions dominating likely enemy avenues of approach. When possible, avoid positioning vehicles in terrain that allows the enemy to anticipate your actions. Determine where you have enough space and fields of fire to concentrate the available firepower. In positioning the forces, seek locations where the weapons can engage the attacking enemy from the flanks and rear. Position the forces to survive the Threat's initial heavy concentrations of artillery fires. Select the best terrain for OPs forward of the defensive positions to observe likely avenues of approach. Decide where obstacles can be emplaced and tied in with natural obstacles to slow, disrupt, confuse, and turn the enemy. This gives you more time to fire and better opportunities for flank and rear engagements.

Stop Enemy Rate of Advance

Threat attacks are based on two principles—speed and mass. Threat forces win by sustaining a high rate of advance (12 to 20 kmph) and pushing a lot of combat power forward in a short period of time. Take advantage of existing natural obstacles or emplace barriers to block the enemy's forward movement and separate his forces. Concentrate enough indirect and direct firepower to kill the enemy in large numbers quickly. You cannot pick vehicles off one at a time as they roll toward you; they will be on top of you before you know it. Compress Threat vehicles and crews into a small area, then attack with all the

firepower you have. Killing most of the enemy force will force him to dig in and establish a hasty defense or withdraw from combat.

Mass Combat Power

The Threat will try to mass its forces where you least expect it and create at least a three-to-one (soldiers and equipment) advantage over you. To defeat the enemy, muster enough combat power to reduce those odds wherever enemy forces are committed. To do this, there are two crucial requirements:

- First, see the enemy well forward of your defensive positions.
- Second, the platoons must be skilled in maneuver and well rehearsed to respond immediately to FRAGOs and move rapidly when necessary.

If these requirements are satisfied and you hit where the enemy is vulnerable, you will win the fight.

Force the Enemy to Fight in Two Directions

Ideally, when engaging an attacking force, you should maneuver the platoons into positions that force the enemy to turn and fight in two directions. This keeps the enemy's flank exposed.

Counterattack

Do not stand passively in position exchanging fire with the attacker. Draw him into your EA and counterattack by fire, or use fire and movement in an exposed flank to finish him off.

PLANNING CONSIDERATIONS

While formulating courses of action in Step 2 of the estimate –

- Determine where to kill the enemy.
- Determine the positions for tanks, BFVs, and dismount elements.
- Plan for security and limited visibility.
- Assign platoon missions and graphic control measures.
- Determine the sequence and timing of fire and maneuver.
- Plan improvement of positions, routes, and obstacles.
- Plan fire support.

Where to Kill the Enemy

As you analyze enemy avenues of approach, attempt to find the places where the enemy is most vulnerable to fire (choke points along the avenues of approach, or open areas lacking cover and concealment). These areas are potential EAs. EAs for antiarmor fires should be from 1,000 to 2,500 meters from friendly positions. EAs for dismounted infantry should allow for overlapping fires of all available weapon systems, including Dragons, LAWs, and squad automatic weapon systems (SAWS).

Position Tanks, BFVs, and Dismount Elements

The terrain analysis should reveal which key terrain offers the weapons and personnel cover, concealment, favorable fields of fire, and trafficable maneuver routes. Concentrate primary positions on the avenues of approach you consider the enemy most likely to use. Make sure the primary positions can cover the EAs with overlapping fires from mutually supporting positions. Maximize flank shots as much as

possible. Select alternate positions in case the enemy suppresses the primary positions. Plan for supplementary positions to cover secondary avenues of approach, especially to the flanks and rear of your positions. Make sure you have good routes between these positions, preferably covered and concealed.

Generally, there are not enough assets to cover all approaches at the same time. A mechanized infantry platoon dismount element can hold or block an area 200 to 300 meters wide, depending on the terrain. In built-up areas, the dismount element can cover about a city block. A tank platoon or BFV element can cover a sector of fire 400 to 800 meters wide at the point of engagement.

Security and Limited Visibility

Establish OPs to provide surveillance on the primary avenues of approach and to observe secondary avenues of approach. Plan for passive and active air defense. Task OPs to observe air avenues of approach. Use the air defense warning and weapons control status to control fires on enemy aircraft. Assist supporting Stinger teams by providing them protection in infantry fighting positions and armored vehicles.

Plan for limited visibility positions. Assume you will have to fight in limited visibility conditions. Remember, thermal sights can usually detect activity within the maximum effective range of tank main-gun and 25-mm chain-gun fires.

Platoon Missions and Graphic Control Measures

Determine which platoon will defend the positions selected. Make sure each platoon has enough space to maneuver. Sometimes it is preferable to control movement to primary, alternate, and supplementary fighting positions by assigning separate primary, alternate, and supplementary platoon battle positions. In other cases, it is preferable to assign a platoon battle position large enough to include primary, alternate, and supplementary fighting positions inside one platoon battle position (see Figure 4-7).

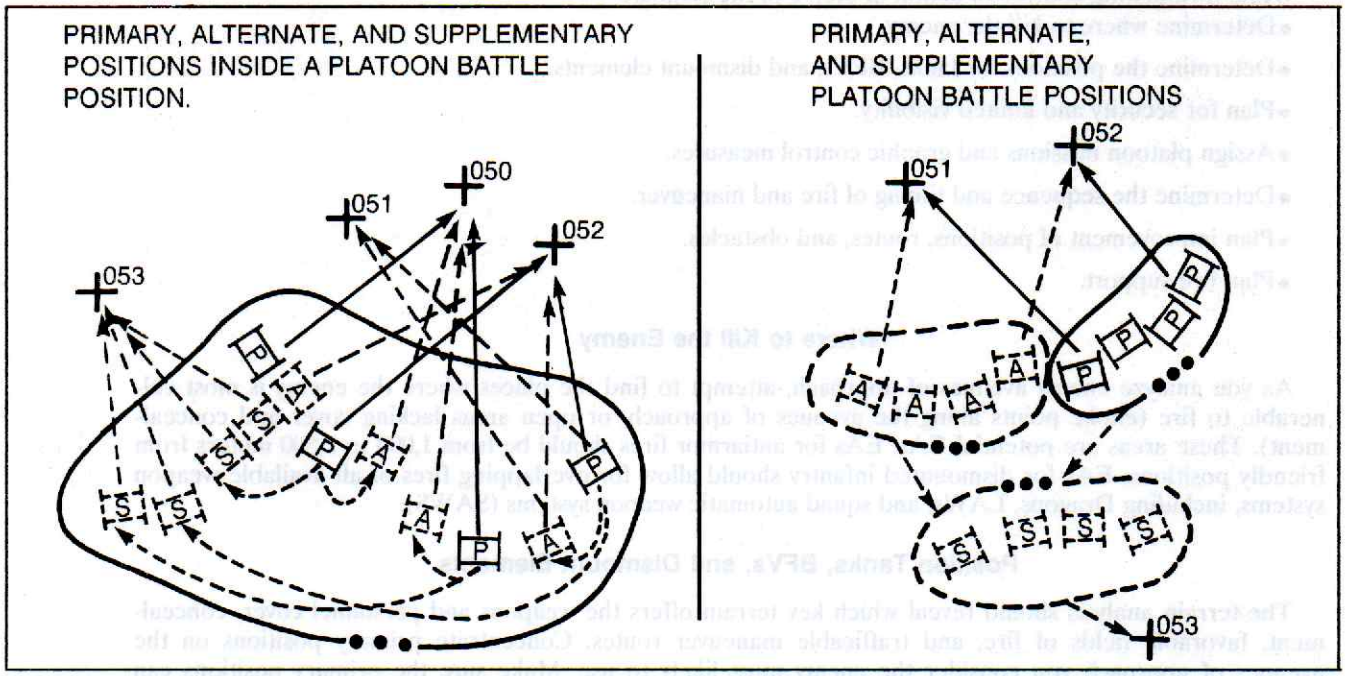


Figure 4-7. Space Allocated to Platoon Battle Positions.

Give each platoon a primary sector of fire to cover from the battle position. Use TRPs to designate limits of the sector. Also, use TRPs to designate sectors of fire to cover secondary avenues of approach and to overwatch friendly movements. When the platoon's supplementary positions are in the same battle position as its primary positions, use on-order orientations to trigger movement to supplementary positions.

Assigning platoon sectors gives the platoon the most freedom of action, but is the most difficult to coordinate. Never draw a sector boundary dividing an avenue of approach, including roads and city streets. Tank platoons generally cannot accomplish the coordination necessary to maintain security and unity of effort along a properly positioned sector boundary. Such coordination is normally conducted by the dismounted elements of a mechanized infantry platoon (see Figure 4-8).

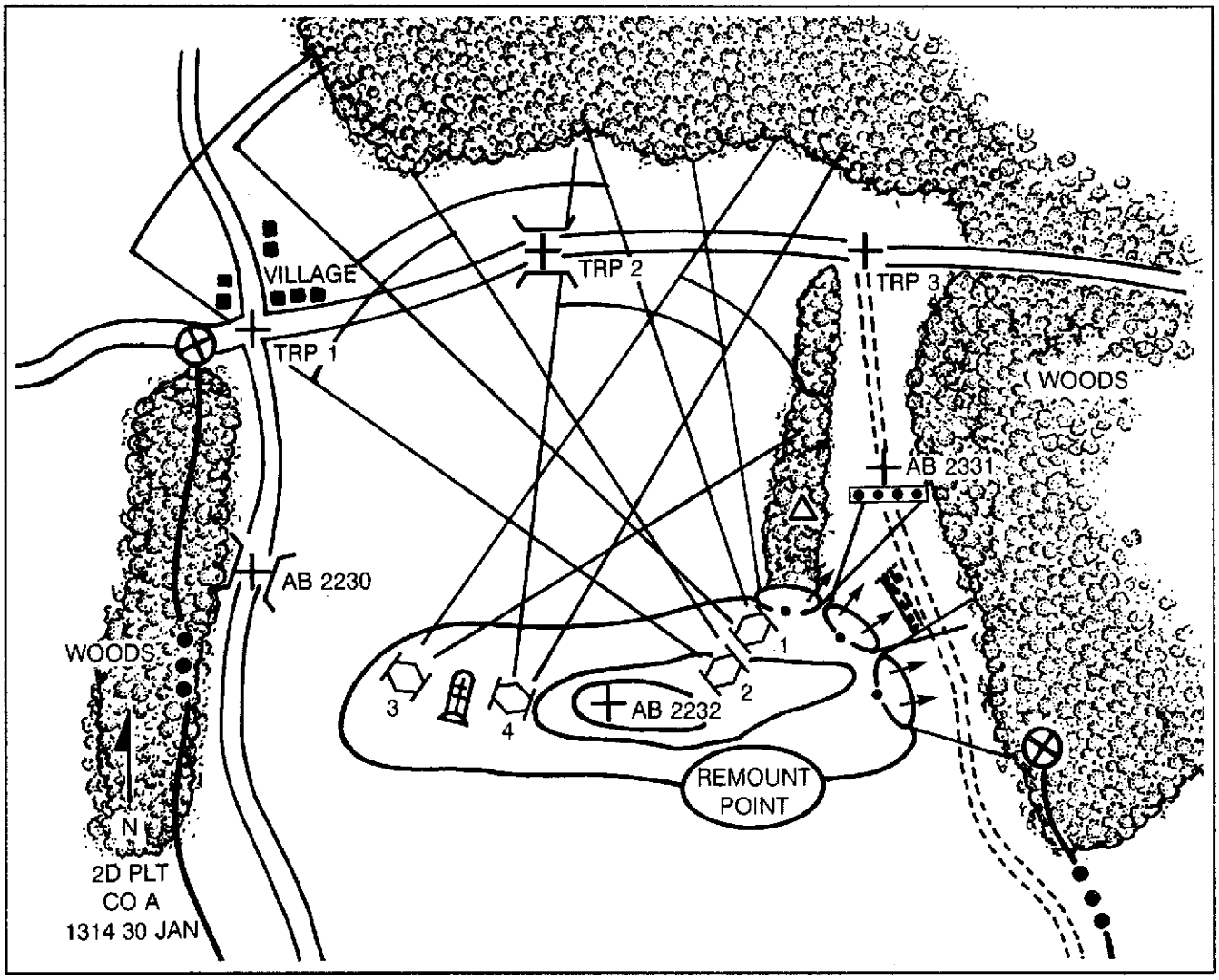


Figure 4-8. Mechanized Infantry Platoon Sector.

A mechanized infantry platoon sector should defend a clearly defined company-size avenue of approach. It may be necessary to assign a tank platoon battle position within the mechanized platoon sector to reinforce antitank capabilities. This requires the platoon leaders of the respective platoons to coordinate fighting positions and fire control measures within the sector.

Remember, boundaries specify sectors of fire and maneuver. Use coordination points to tie fires along platoon boundaries. When fields of fire are so limited that physical contact must be made to secure the boundary, use contact points instead, normally in heavily wooded or built-up areas.

Sequence and Timing of Fire and Maneuver

Determine the sequence in which you expect the battle to occur. Then determine where and when your subordinates must initiate actions to achieve the intended results. Consider how long it takes the elements to react and the movement rate of the enemy. Identify a trigger point where each action must be started for the plan to work.

There are two ways to control or trigger the initiation of each critical action. A point can be selected where a specific event will automatically trigger the action you want to execute. When possible, confirm the location of trigger points with subordinates and physically time the critical actions during rehearsals.

Critical actions may also be controlled by using FRAGOs. This is used when the situation is unclear and you have not had time to conduct a rehearsal. In this case, give yourself a reasonable time to make a decision, react, and issue orders. Use SOP visual signals to supplement other forms of communication to ensure subordinates receive the cue to initiate an action.

Improve Positions, Routes, and Obstacles

Plan how to use the time and resources available to prepare positions, routes, and obstacles. Prioritize the tasks to do the most important things first; no defensive position is ever finished. Continue the defensive preparations until interrupted by the advance of the enemy. (Appendix C discusses obstacle emplacement.)

Fire Support

Plan fire support to complement and reinforce the direct-fire plan. As with obstacles, fire support priorities should support the main effort. Fire support can also be used to engage the enemy in areas that you cannot cover with direct-fire weapons. The following items must be addressed as part of the fire support plan:

- Priorities of fire. The company team priority of fires should generally go to the platoon best able to direct and adjust indirect-fire missions at the point of the main effort.
- Artillery target list. The battalion task force fire support plan will direct responsibility for executing specific targets on the battalion task force target list made out by the FSO. Develop the target list based on the indirect fire plan. The fire plan should include targets in front of, on top of, and behind the battle position. The company FSO helps with this, but the commander is responsible for the fire plan.

PREPARATION OF POSITIONS

The battalion task force commander will normally assign a level of preparation for battle positions. You can raise the level of preparation of a position, but may not lower it. There are three levels of preparation: occupy, prepare, and reconnoiter.

Occupy

A unit occupies the position it will initially defend. This position is fully prepared and reconnoitered before the defense is initiated. The unit will have this position completed and occupied and will be ready to fight not later than the time specified in the mission statement.

Prepare

The unit will take all actions necessary to prepare the position for the company's mission. The troops must generally accomplish the following tasks:

- Physically sight each weapon in its fighting positions (primary, alternate, and supplementary). Tanks and BFVs occupy primary positions from the rear.
- Establish fire control measures, to include vehicle fire plan sketches, position stakes, and possibly TRP markers for tanks and BFVs.
- Camouflage fighting positions using natural foliage and netting.
- Clear fields of fire.
- Construct fighting positions to improve available cover and concealment. Dismounted infantry positions must have overhead cover. (If engineer resources are available, tank and BFV fighting positions are also constructed.)
- Reconnoiter and prepare routes between weapon positions.
- Establish CSS and conduct sustainment during preparations. Prestock ammunition and other needed supplies in platoon and squad or vehicle loads near the fighting positions, with good concealment and overhead cover if possible.
- Coordinate with higher, adjacent, and supporting units. Coordinate the locations of platoons, boundaries, and fire control measures.
- Conduct rehearsals to practice planned maneuvers.

Reconnoiter

A unit instructed to reconnoiter a position will send one or more representatives to conduct a physical reconnaissance of that position. As a minimum, the reconnaissance party must determine the following:

- What fighting positions are available in and around the battle position. (Is the terrain within the battle position sufficient to support the entire company team, or is more space required?)
- What covered and concealed routes are available to enter and leave the fighting positions from the rear and to allow maneuver between primary, alternate, and supplementary positions.
- What fields of fire are available to each fighting position. This should be determined by driving one of the reconnaissance party's fighting vehicles down the avenues of approach to be covered by direct fire from the position.

(Figure 4-9 shows the tasks required to prepare and occupy a battle position. It also summarizes the different techniques used in hasty and deliberate defense to accomplish these tasks.)

TASK	TECHNIQUES	
	DELIBERATE DEFENSE	HASTY DEFENSE
Security	Company Team Security Force with Reconnaissance/Quartering Party.	Initially, Lead platoon Establishes OPs and Overwatch, Bounding or Traveling Overwatch is used.
Chemical/Obstacle Reconnaissance	Company Team Quartering Party.	Lead Platoon(s) in Contact.
Leader's Reconnaissance	Commander, XO, Platoon Leaders, and Company FSO Conducts Physical Reconnaissance.	Lead Platoon's Reports Supplements Map Reconnaissance.
Occupation of Initial Positions	Company Team Quartering Party (platoon guides).	Platoon Leaders Direct Fighting Vehicles and Rifle Teams into Position Using Visual Signals, Drills, and Oral FRAGOs.
Confirm Fields of Fire	Platoon Fire Plan Confirmed and Sent to Company Team Commander.	Sectors of Fire Assigned and Confirmed Using Cardinal Direction Clock Method and Existing Graphics.
Camouflage	Camouflage Nets Are Supplemented by Available Foliage Immediately on Occupying Positions.	Use Camouflage Nets Immediately on Occupying Positions.
Establish Communications	Establish Company Team Wire Net, Visual Signals in Accordance with OPORD or SOP.	FM Radio, Messengers, SOP Visual Signals.
Construct Fighting Positions	Based on Time and Available Engineer Support.	Infantry Digs Hasty Fighting Positions Immediately, Tank and BFV Fighting Positions Generally Not Improved.
Prepare Routes	Based on Equipment, Manpower, and Time Available.	Generally, by Map Reconnaissance Only.
Prepare Obstacles	Based on Battalion Task Force Plan, Engineer Support, and Other Resources Available.	Hasty Protective Obstacles Emplaced by Dismounted Infantry, if Time is Available.
Combat Service Support	Resupply and Prestock Class III and V, Service-Station and Tailgate Technique Can Be Used.	Use Service-Station Resupply Technique to Accomplish Resupply as Time and the Enemy Situation Permit.
Sustainment	Commander Determines "stand to" Times and REDCON Status, Platoons Establish Sleep Plans in Accordance with REDCON Status.	Governed by SOP, Commander Determines Current REDCON Status.
Coordinate With Higher, Adjacent, and Supporting Units	Extensive Face-to-Face Coordination in Accordance with SOP and OPORD. • Confirmation of fire plans. • Coordination of flanks. • Obstacle coordination (handover, execution, positioning). • Fire support planning. • Passage of lines.	Coordination by Most Secure Means In Accordance with SOP, as Time Permits.
Rehearsals	Conducted as Directed by Company Team Commander Under Realistic Conditions (limited visibility, MOPP IV, radio silence).	Generally Not Conducted.
Occupy Hide Positions	After All Preparations Are Complete.	Prior to Preparing Positions. When the Enemy Situation Indicates an Artillery Barrage is Likely and Preparations Must Cease.

Figure 4-9. Hasty and Deliberate Defense Techniques.

Section IV. COMBINED ARMS IN THE DEFENSE

PRINCIPLES OF WEAPON POSITIONING

Terrain affects three important aspects of weapon positions:

- Protection – cover and concealment.
- Firepower – observation and fields of fire.
- Mobility – obstacles and avenues of approach.

Dispersing positions laterally and in depth helps protect the force from enemy observation and fires. Establish platoon positions in depth, allowing enough maneuver space within those positions to establish in-depth weapon and squad positions. Fighting vehicle positions should be at least 100 meters apart. Foxholes should have a minimum dispersion of 25 meters.

Night observation has greatly improved with the advent of thermal technology. However, passive sights remain the mainstay of dismounted infantry teams and CS and CSS personnel. Figure 4-10a and Figure 4-10b demonstrate how to use night-vision devices organic to the operation. Flares and mortar or artillery illumination can also be effectively used to improve the ability to observe and disrupt enemy attacks at night.

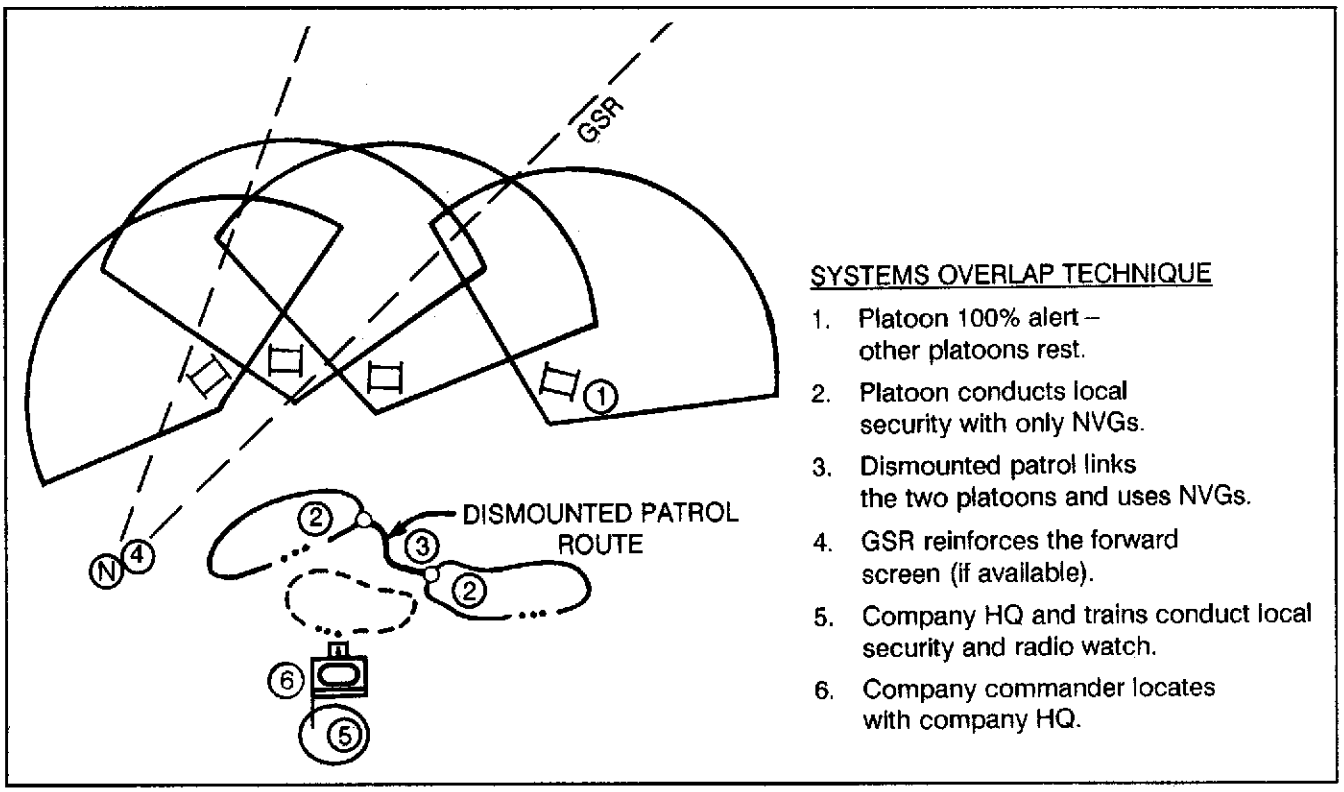
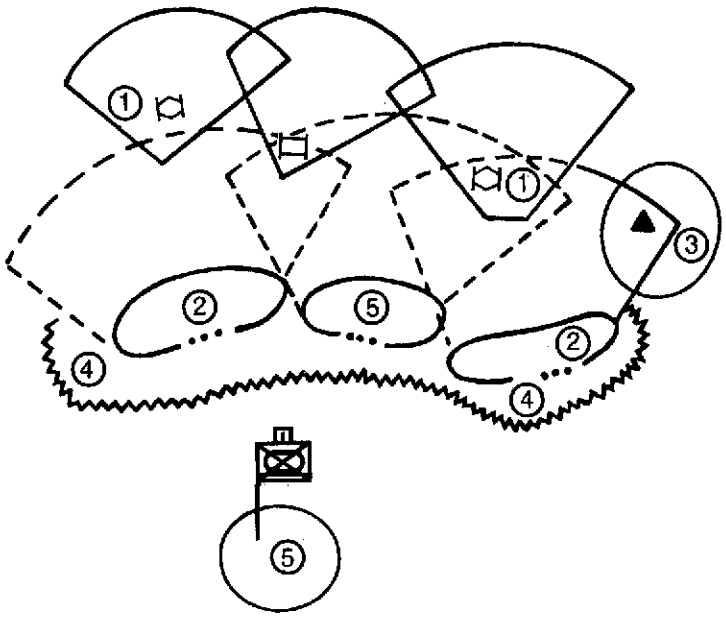

GSR
DISMOUNTED PATROL ROUTE
N
1
2
3
4
5
6
SYSTEMS OVERLAP TECHNIQUE
1. Platoon 100% alert – other platoons rest.
2. Platoon conducts local security with only NVGs.
3. Dismounted patrol links the two platoons and uses NVGs.
4. GSR reinforces the forward screen (if available).
5. Company HQ and trains conduct local security and radio watch.
6. Company commander locates with company HQ.

Figure 4-10a. Night Surveillance Plan (Part I).



DOUBLE-LAYER TECHNIQUE

1. Each platoon puts vehicle OP forward.
2. Platoons keep all weapon sights on – crews rotate to sleep.
3. Point OP to watch a specific location or dead spot in observation.
4. Platoons provide their own local flank and rear security using foot patrols and sentries.
5. Company commander locates with one of the platoons or with the HQ platoon and company trains.

Figure 4-10b. Night Surveillance Plan (Part II).

Indirect fires affect the ability of the unit to see and engage targets. Heavy indirect fire creates smoke, fills the air with debris of all types, and forces the soldiers to seek cover. To compensate for the effects of indirect fires, plan alternate positions and remain in hide positions as long as practical before committing yourself.

Good platoon positions allow tanks, BFVs, and improved TOW vehicles (ITV) to achieve flanking fires. Flank shots increase kill probabilities against enemy armored vehicles and lessen the enemy's ability to detect friendly fires and maneuver against friendly positions.

Units achieve mutual support through assigned tasks, relative positions, and inherent capabilities (normally the range and effectiveness of direct-fire weapons and their ability to maneuver). Mutual support can be achieved best by positioning platoons laterally and in depth and assigning interlocking fields of fire. In this way, dead space and assigned sectors of fire are covered. With proper positioning of elements, you can achieve flank engagements for some elements while achieving mutual support for all elements.

EMPLOYMENT OF TANKS, BFVs, AND DISMOUNTED INFANTRY

When planning the company team defense, the avenues of approach will be the most important factor to consider to determine where to position assets. Cover all avenues of approach that affect your position. You can use initial positioning of weapon systems to cover the avenues or provide early warning through sensors and OPs so forces can be maneuvered to cover avenues where enemy elements appear. General guidelines for positioning assets are as follows:

- Position tanks and BFVs where they can cover mounted avenues of approach.
- Position dismounted infantry to cover dismounted avenues of approach.
- In all defensive situations where time permits, infantry dismounts and digs in.
- When appropriate, use dismounted infantry to secure obstacles, particularly during periods of limited visibility.
- If there are more than enough dismounted infantrymen to cover dismounted avenues of approach and secure critical obstacles, position those remaining to cover possible enemy dismounted assaults along mounted avenues of approach or use them as a reserve to conduct local counterattacks.
- Do not position dismounted infantrymen where they will be exposed to indirect and long-range direct fires long before they are able to take the enemy under fire. Use reverse slopes whenever possible.
- Maintain platoon integrity when possible. If the estimate leads you to employ tanks or BFVs alone or in sections, do so, but not before carefully considering the loss of mutual support and the inability to mass fires.

SEPARATE MANEUVER ELEMENTS COOPERATE IN THE DEFENSE

In planning the defense, determine whether the weapon systems are best employed as organic platoons on separate positions, or by separating or combining elements of different platoons in one or more positions.

Maneuver elements in *separate positions with separate avenues of approach* when—

- Mutual support between positions cannot be achieved.
- Overlapping sectors of fire are not advantageous or would result in target overkill.
- Only one type of weapon system or platoon can be used on an avenue of approach (such as dismounted infantry on a dismounted approach).

Use this technique when the company team position has a combination of restrictive and nonrestrictive terrain, when it must cover multiple avenues of approach, or when it has an excessively wide frontage to defend. You might encounter such a situation when defending a sector or conducting a delay. (See Figure 4-11.)

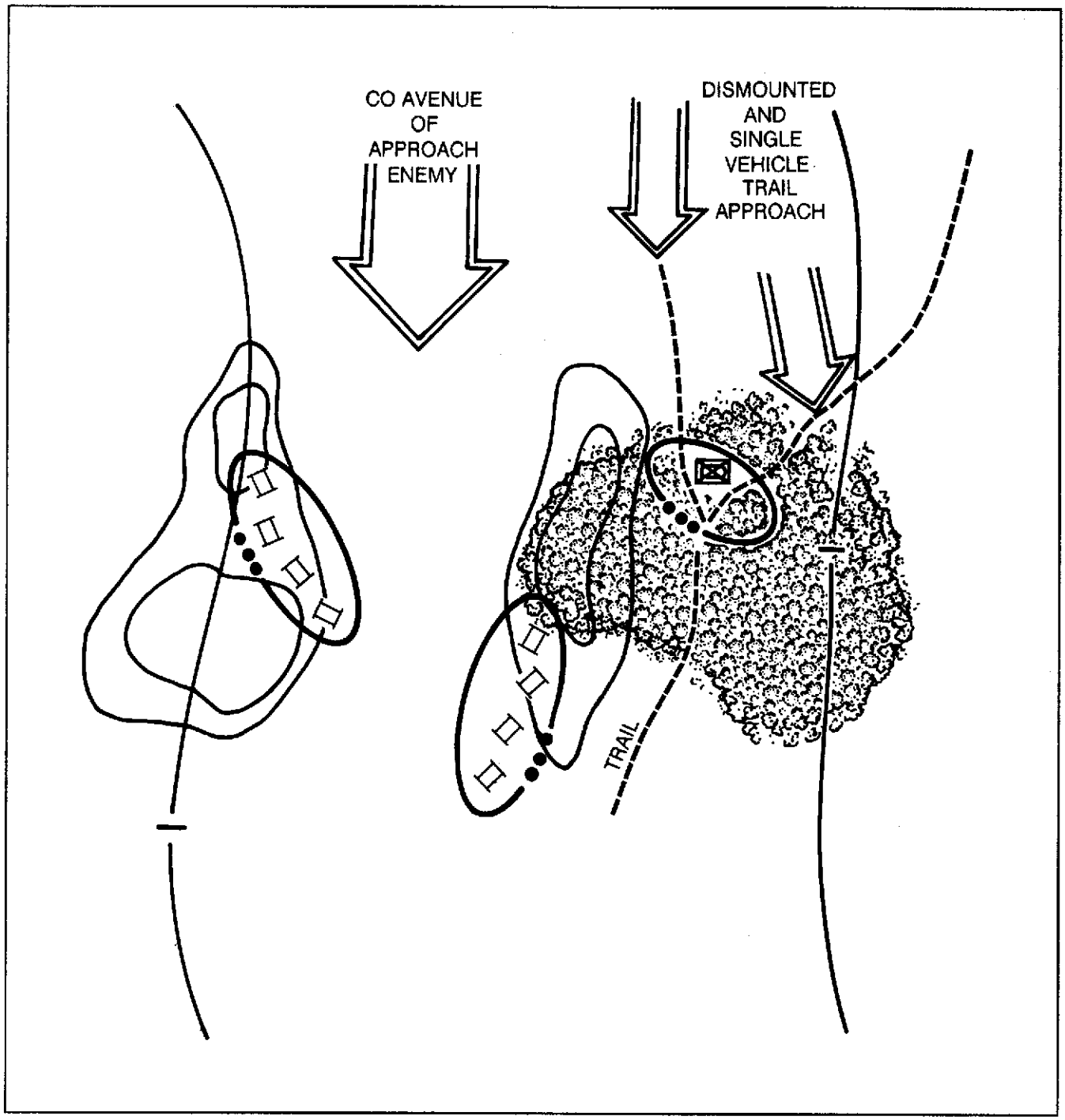


Figure 4-11. Maneuver Elements in Separate Positions, Separate Avenues of Approach.

Maneuver elements in *separate positions with the same avenue of approach*. This technique is most frequently used when defending a single large avenue of approach. Platoon sectors of fire overlap all or in part. When using this technique, platoon leaders continue to coordinate their fires with each other while the commander controls the maneuver of the company team between battle positions. This coordinated effort is especially important when tank and BFV platoons are engaging different types of targets in a common EA. BFVs and dismounted elements use a similar technique when occupying separate positions covering the same avenue of approach. (See Figure 4-12.)

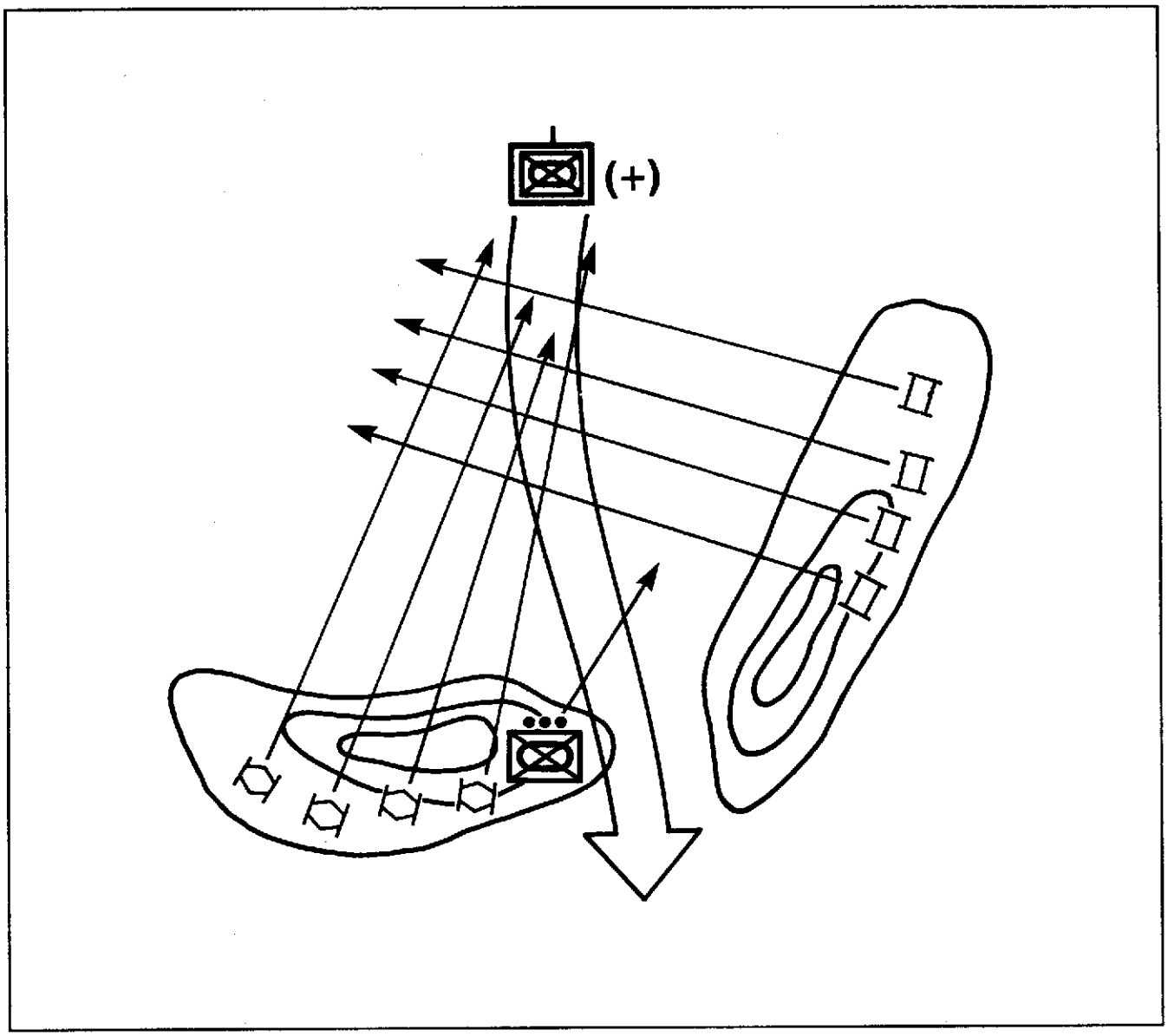


Figure 4-12. Maneuver Elements in Separate Positions, Same Avenue of Approach.

Maneuver elements in the *same positions, different avenues of approach*. To use all weapons to the best advantage, this technique is used when elements of different platoons share positions. This situation is most frequently encountered when—

- Defending a battle position with multiple avenues of approach.
- A mechanized-heavy team must disperse its tanks to maintain mutual supporting fires within the tank platoon.
- Tanks or BFVs with dismounted infantry occupy firing positions on the edge of a woodline or town and engage the enemy at long range. The tanks and BFVs then move to alternate or subsequent positions to maintain the range standoff of their systems while the dismounted infantry engages and the enemy closes on the initial position. (See Figure 4-13.)

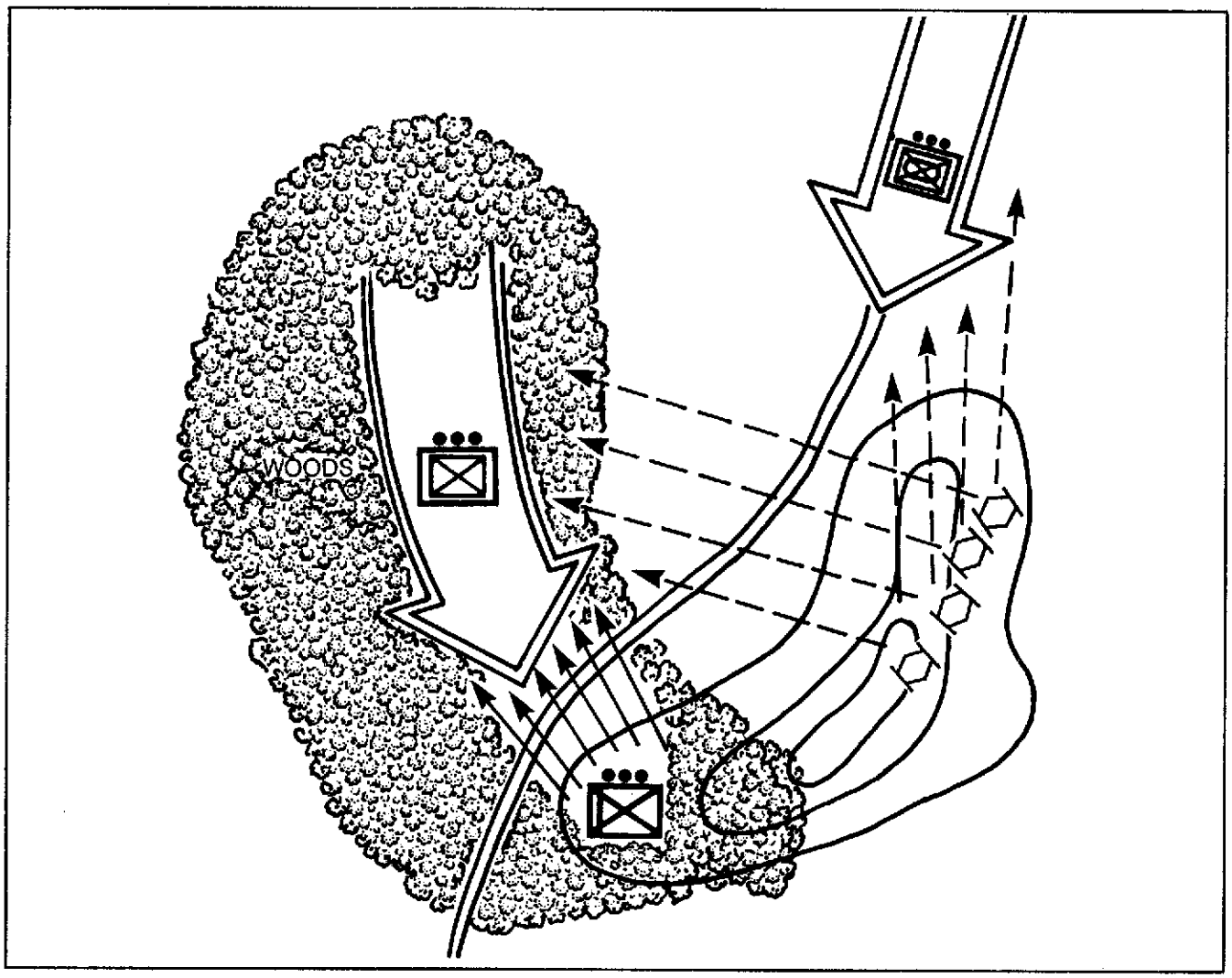


Figure 4-13. Maneuver Elements in the Same Positions, Different Avenues of Approach.

This technique is complicated because two maneuver elements occupy the same battle position or sector and must coordinate their actions to maintain unity of effort. It is important to make sure all soldiers in the position understand the plan and that all movements are thoroughly rehearsed under realistic conditions.

Maneuver elements in the *same position with the same avenue of approach*. This technique is the most difficult to coordinate and execute and seldom uses all weapon systems to the best advantage. It is normally used only when defending a strongpoint in a battle position to retain terrain or in extremely restrictive terrain (such as urban areas or jungles). The fighting vehicles are used to reinforce and support the dismounted infantry at close range. The platoon leader of the dismount element normally controls movement of fighting vehicles inside his position and establishes which sectors and targets they will engage.

Section V. DEFENSE OF A BATTLE POSITION

The company team defends a battle position to concentrate its fires, limit its maneuver, or place it in an advantageous position to counterattack. The battle position is a general location on the ground. When given a battle position to defend, position the forces on the best terrain in and around the battle position. You may position security forces forward of and around the battle position. You can also locate CS and CSS elements outside the battle position. Although all positions outside the battle position are coordinated with higher, adjacent, and supporting units, you are free to maneuver within the battle position.

When the company team is defending a battle position, they will accomplish one or more of the following:

- Destroy an enemy force in an EA.
- Block an avenue of approach.
- Control key or decisive terrain by holding the battle position.
- Fix the enemy force to allow another unit to maneuver.

CRITICAL TASKS

When defending a battle position, the company must always –

- Deny enemy reconnaissance the ability to detect and report its positions.
- Concentrate fires to destroy the enemy along the most likely enemy avenue of approach.
- Distribute fires to kill the maximum number of targets and maintain mutual support.
- Deny the enemy the use of key terrain influencing friendly positions.
- Maneuver to destroy enemy units from alternate and supplementary positions.
- Counterattack to destroy enemy units and retain the initiative.
- Use fire support to engage the enemy beyond the range of direct-fire weapons, isolate enemy formations, suppress tanks and ATGMs, and destroy stopped enemy units and dismounted infantry.

- Use obstacles to canalize the enemy into EAs, disrupt his mutually supporting formations, and slow his rate of advance.
- Coordinate fires and maneuver with adjacent and supporting units.

When the battalion task force commander's intent is to retain key or decisive terrain, the company team must –

- Form the main effort to hold specific terrain features against enemy assault.
- Prepare positions extensively around the terrain to be held.
- Coordinate with battalion task force reserve units committed to reinforce the company team battle position or to counterattack in or around the battle position.

Note: This is usually accomplished by pure mechanized infantry companies and mechanized-heavy teams.

When the battalion task force commander intends to maneuver, the company team must –

- Form the main effort along mounted avenues of approach.
- Initiate fires when and where effective direct fires will cause the enemy to deploy.
- Maintain a mobile advantage over the enemy through fires, obstacles, and maneuver.
- Disengage based on the criteria established by the battalion task force commander.
- Maintain mutual support during disengagement.
- Conduct extensive reconnaissance of positions in depth.
- Coordinate movement out of the battle position with higher, adjacent, and supporting units.

Note: This is most frequently accomplished by tank companies and tank-heavy teams.

TECHNIQUES

When possible, desiginate battle positions for tanks, BFVs, and dismounted platoons. Give each battle position a primary sector of fire to cover from primary and alternate positions. Use TRPs based on recognizable terrain features. Use TRPs to establish trigger lines, supplementary sectors of fire, or to trigger movement to supplementary positions within the platoon's battle position. PLs may be used to control the initiation of fires.

Positioning infantry vehicles is difficult. When mounted movement is likely, they should remain close enough to the dismounted infantry to allow prompt remounting. The vehicles also have heavy automatic weapons that support the dismounted element. If there must be a choice between supporting the tanks or supporting the dismounted infantry, the BFVs usually will be positioned to support the infantry.

Local security is critical to defending battle positions. Tanks and BFVs are best protected from enemy fire and observation in reverse slope hide positions. OPs should be used to provide early warning for the positions. Obstacles, dismounted approaches, and dead space between OPs must be secured with dismounted patrols. During limited visibility, OPs should be supplemented by vehicles with thermal sighting capability to cover mounted approaches to the battle positions. These vehicles should be positioned away from the primary fighting positions.

When directed to hold key or decisive terrain, form the main effort with dismounted infantry to prevent the enemy from assaulting successfully and seizing key or decisive terrain in your battle position. Use tanks, BFVs, fire support, and obstacles to support the main effort.

Use tanks and BFVs to destroy the enemy at medium to long range. Keep tank platoons and BFV elements together as much as possible to increase their firepower, maneuverability, and command and control. Position tanks and BFVs in mutually supporting positions so they can complement each other. Split up these elements only when the terrain is so compartmentalized that this mutual support is not possible.

Prioritize TOW missile, Dragon, and 25-mm chain-gun fires to destroy BMPs and BTRs first. Concentrate tank fire on tanks. Do not ignore the enemy's CS and command and control vehicles. Killing these early in the battle also reduces the enemy's ability to conduct a successful assault. Engineer vehicles should also be a prime target.

Plan FPFs with high explosive, variable time (HE-VT) on the most critical dismounted approaches to cover hasty protective obstacles and reinforce the effects of dismounted infantry weapons. Give the priority of fires to the dismounted element covering the most critical approach into the decisive terrain in the battle position.

Local Counterattack

Conduct local counterattacks to support the defense of a battle position. Local counterattacks may also be conducted as part of other company team defensive missions. Execute a counterattack by fire or by fire and movement. (For further discussion, see "Counterattack".)

Hasty Defense

You will often be required to establish a battle position while in contact with the enemy or when contact with the enemy is imminent.

When forced to assume a hasty defense, the team moves to occupy the best defensive terrain possible. If you are not under fire, move quickly and deploy to confront the enemy when it appears. Make a hasty estimate of the situation, report the situation to the battalion task force commander, and begin coordinating direct and indirect fires. Continue the preparations until the enemy attacks or you are given new orders.

When under fire, you will have to attack, fight from where you are, or delay to occupy suitable defensive positions. Possible actions on contact are—

- Suppress enemy direct-fire weapons.
- Report the situation to the battalion task force commander.
- Move to terrain with cover and adequate firing positions.
- Deploy and defend until the enemy is defeated or you receive new orders.

In either case, maintain freedom of maneuver until the commander directs you to fight in place.

Section VI. DEFEND IN SECTOR

A company team is assigned a defend-in-sector mission to prevent enemy forces from passing the rear boundary of the sector, retain flank contact and security, and ensure unity of effort with the battalion task force scheme of maneuver.

The battalion task force commander normally orders a defend-in-sector mission when—

- Flexibility is desired.
- Retention of specific terrain features is not necessary.
- The battalion task force cannot concentrate fires. This can occur when the battalion defends on an extended frontage or along a cross-compartment or when multiple avenues of approach enter the battalion area of operations.

CRITICAL TASKS

Basically, a company team defending in sector must do the same things as in the defense of a battle position. In addition they must—

- Retain greater flexibility through the use of maneuver.
- Use the depth of the sector to dissipate the enemy's attack.
- Report crossing PLs.

TECHNIQUES

The battalion task force commander uses lateral boundaries, PLs, rear boundaries, coordination points, and specific instructions to communicate how he intends for the company team to conduct the defense in sector. The company team's boundaries dictate which avenues of approach must be covered, and what size force the company team is expected to defeat. (A company can defend a battalion avenue of approach.) The battalion task force commander may partially limit the company team's freedom of maneuver by establishing specific conditions by time or event that must be met before a PL can be crossed. Otherwise, the company team is free to maneuver across PLs as long as these are reported to the battalion task force headquarters.

Most of the techniques described in the section on defense of a battle position are applicable to defense in sector as well. When defending a sector, maintain unity of effort with adjacent units by manning contact points and covering coordination points with fire along the company team boundary. Since this mission is more decentralized than defense of battle positions, monitor the situation to your flanks closely and coordinate your actions with the flanking company teams. (See Figure 4-14.)

Allocate space to the platoons by assigning platoon battle positions, platoon sectors, or a combination of both. Generally, when adjacent platoons can achieve mutual support, they should be given battle positions to control their maneuver. Give each platoon a sector of fire using TRPs to identify which areas each platoon is to cover by fire.

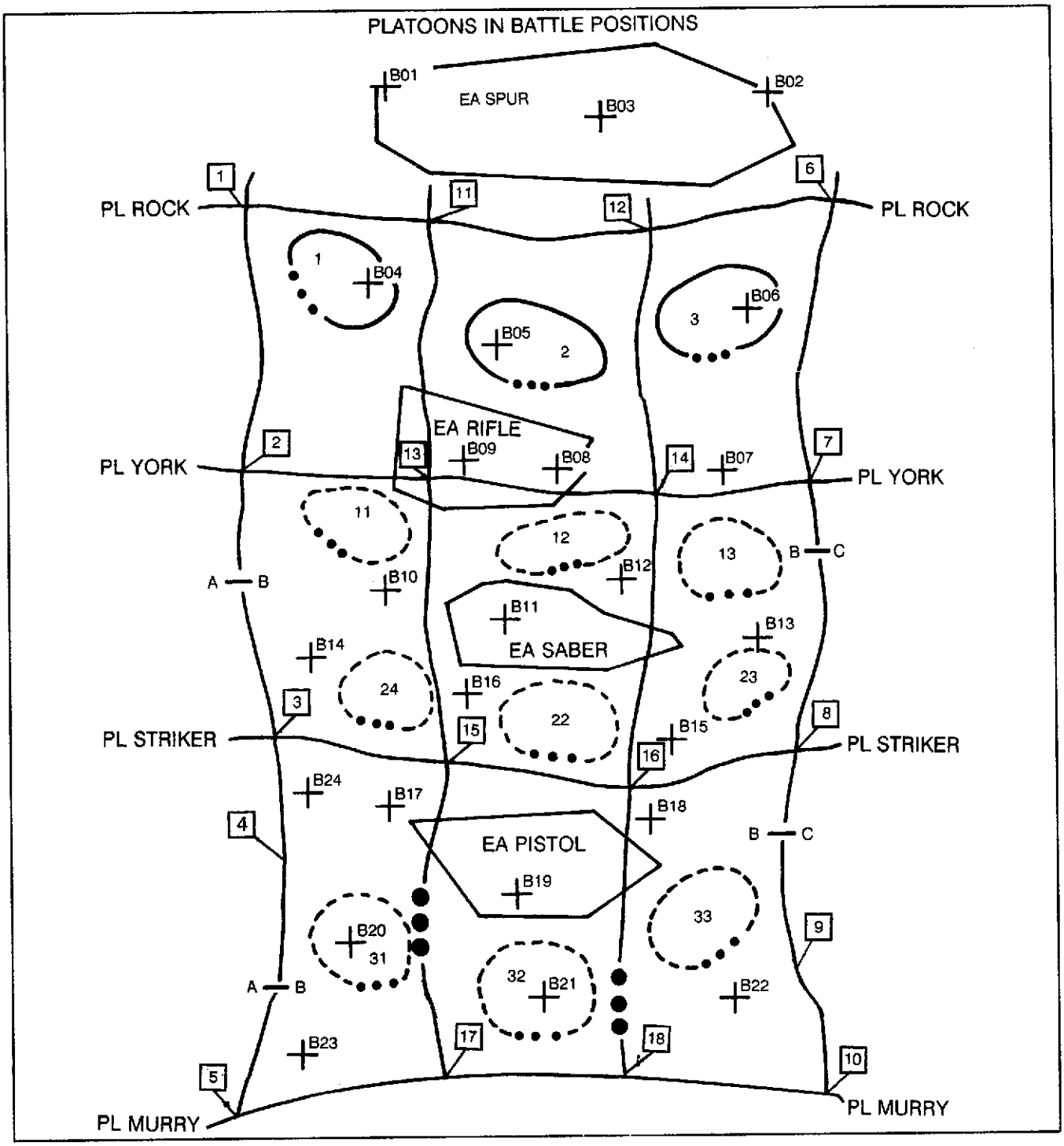


Figure 4-14. Company Team Defends in Sector.

Section VII. DEFENSE OF A STRONGPOINT

When the company team defends a strongpoint, it must retain the position at all costs, until ordered to withdraw. This mission is given to a company team to accomplish one or more of the following:

- Hold key or decisive terrain critical to the battalion task force scheme of maneuver.
- Provide a pivot for the maneuver of friendly forces.
- Block an avenue of approach.
- Canalize the enemy into friendly EAs.

Defense of a strongpoint is the least frequent mission for an armor or mechanized force. Strongpoints sacrifice the mobility of the weapon systems, demand extensive engineer materials and equipment, and take a long time to complete. Before committing a platoon to construct a strongpoint, you must have the approval of the battalion task force commander. This does not limit freedom to improve defensive positions as much as time and resources permit.

A strongpoint is held at the risk of high casualties. The strongpoint must be tied in with existing obstacles and should be positioned with 360-degree security and fighting positions so it cannot be easily overrun or bypassed. The enemy must be forced to reduce the strongpoint by massive artillery concentrations and dismounted assaults. A strongpoint can be used in conjunction with battle positions and sectors to enable the company team to make the best use of its tanks and BFVs. This mission is normally executed by a mechanized infantry company or a mechanized-heavy team.

CRITICAL TASKS

When assigned a mission to defend a strongpoint, the company team must accomplish the same basic tasks as when it defends a battle position. It must also—

- Dedicate all available resources to accomplish survivability and counter-mobility engineering tasks.
- Use dismounted infantry in mutually supporting positions to retain the decisive terrain identified by the battalion task force commander.
- Destroy the enemy force before the perimeter of the strongpoint is breached.
- Use counterattacks to reestablish the integrity of the perimeter and regain the key or decisive terrain within the strongpoint.
- Identify positions where reinforcements will be used if required to maintain the integrity of the strongpoint.
- Form the main effort around fighting vehicle elements in the initial phase of the battle. When the enemy enters direct-fire range of the strongpoint, shift the main effort to support the strongpoint.
- When defending the combination of a company team sector, battle positions, and a strongpoint, position both tank platoons and BFV elements forward to accomplish the following tasks:
  - Force the enemy to deploy early.

–Draw artillery fire away from the strongpoint.

–Deceive the enemy as to the location of the strongpoint.

–Attrite the enemy with long-range fires.

- As the enemy closes with the strongpoint and attempts to assault it, maneuver the fighting vehicles outside the strongpoint where they can gain maximum flanking fires against the enemy. Use the strongpoint to fix the enemy while the tanks and BFV counterattack into enemy flanks.

TECHNIQUES

Position the FPF where you expect the enemy to initiate a dismounted assault. Make sure all FPFs are registered.

Although it may not be desirable to position combat trains inside the strongpoint, especially if the majority of the fighting vehicles are outside, you will generally want to at least establish the following:

- An aid station with separate NBC shelters for contaminated and uncontaminated wounded.
- A water point.
- Prestock of Classes I, III, IV, and V.
- A KIA collection point.
- Platoon NBC shelters for hasty decontamination. (These also provide a warm, dry shelter during severe weather conditions.)

Conduct thorough rehearsals on the ground to practice maneuver inside the strongpoint. Make sure each man knows –

- The locations of platoon positions and OPs in, and adjacent to, the strongpoint.
- The location of the company team CP, aid station, resupply points, and prestocks.
- The signals to initiate and cease fire, including FPFs.
- The locations of all fighting positions within the platoon, and the platoon CP.

When necessary, position fighting vehicles in the strongpoint, primarily on mounted approaches with supplementary positions tied into rifle team positions to cover dismounted avenues. Sometimes it may be necessary to position fighting vehicles in depth behind the rifle team positions to cover the dismounted avenues (see Figure 4-15). If so, make sure the fighting vehicle crews know exactly where the infantry fighting positions are located.

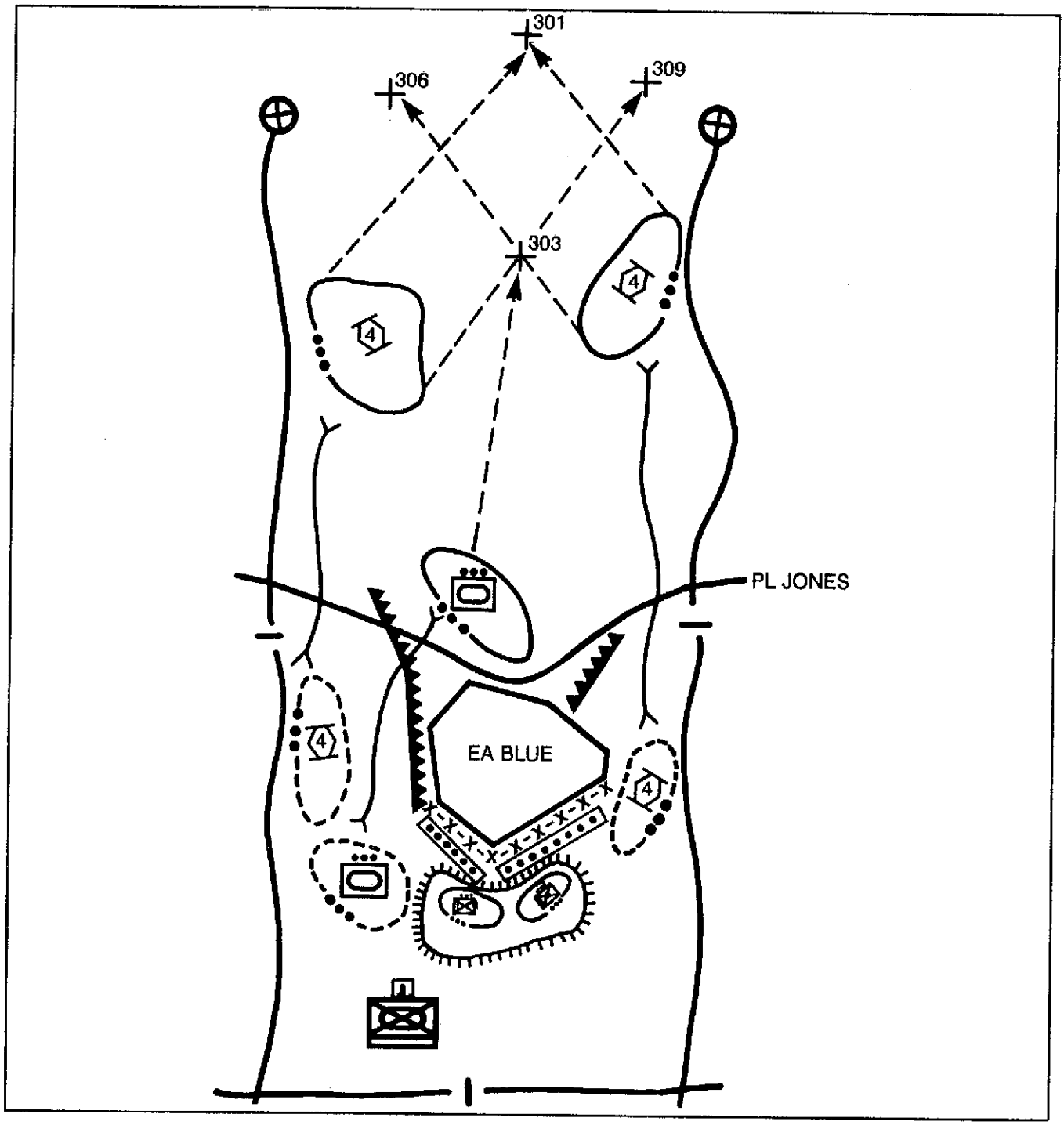


Figure 4-15. Company Team Defending a Strongpoint (Fighting Vehicles Outside the Strongpoint).

Section VIII. RESERVE

When the company team is assigned a reserve mission, be prepared to accomplish one or more of the following subsequent missions:

- Counterattack.
- Defend a battle position.
- Reinforce a battle position, sector, or strongpoint.
- Assume the mission of another company team (this normally requires a relief in place).

The reserve company team may conduct a screen as part of a security force during preparation of the defense.

CRITICAL TASKS

When assigned a reserve mission as part of a battalion task force defense, the company team must –

- Occupy the reserve position (either a battle position or an assembly area).
- Reconnoiter the battalion task force sector or battle position, concentrating on areas designated for likely subsequent missions.
- Maintain the REDCON allowing the company team to react promptly to an on-order mission.
- Rehearse likely subsequent missions.

The company team may also be required to –

- Assist rearward passage of lines.
- Overwatch the maneuver of forward company teams.
- Conduct screen operations.
- Conduct rear area security operations in the battalion task force sector.

When ordered to reinforce another company team, the reserve company team must –

- Establish communications with the unit being reinforced.
- Coordinate positions, routes, obstacles, and fire plans with the unit being reinforced.
- Coordinate a linkup with the reinforced unit to include time, place, and recognition signals.
- Move into adjacent positions covering the same avenues as the unit being reinforced.
- Consolidate and reorganize the reinforced position at the first available opportunity.

When ordered to assume another company team's mission, the reserve company team does the same tasks as in a reinforcement and conducts a relief in place to accept the battle handover, or assists the relieved unit in a rearward passage of lines to accept the battle handover.

TECHNIQUES

The commander and subordinate leaders must know the plans of the other company teams in the battalion task force, especially when subsequent missions require cooperation to achieve common tasks. Coordinate face to face at the earliest possible opportunity. This can be done by sending a liaison to each company team to attend its OPORD or by arranging a time and place to meet with each company team commander. Make sure you obtain information from the company teams along the FEBA about–

- The terrain and enemy situation.
- How the forward company team commander intends to support the subsequent mission.
- What support the forward company team requires to execute its mission.
- Platoon positions and graphics.
- Obstacle locations.
- Fire plans, including artillery targets, TRPs, EAs, and FPFs.
- Routes and passage points.
- Emergency signals (such as lifting direct and indirect fires).

COUNTERATTACK

A counterattack is an attack by all or part of a defending force against an enemy attacking force. A counterattack is conducted to–

- Destroy enemy units.
- Regain freedom of maneuver.
- Regain the initiative.
- Regain key terrain.
- Relieve pressure on an engaged unit.

The battalion task force may execute a counterattack by fire or by fire and movement. Execute a counterattack by fire (see Figure 4-16) as follows:

- Move to and occupy the assigned battle position (counterattack) along a covered and concealed route. Once all elements are in position, initiate fires en masse to make the best use of surprise and shock effect. Use visual signals supplemented by fire commands via FM radio to initiate fires. Establish sectors of fire before beginning the engagement.
- Continue to engage the enemy force until it is destroyed or until ordered to move by the battalion task force commander.

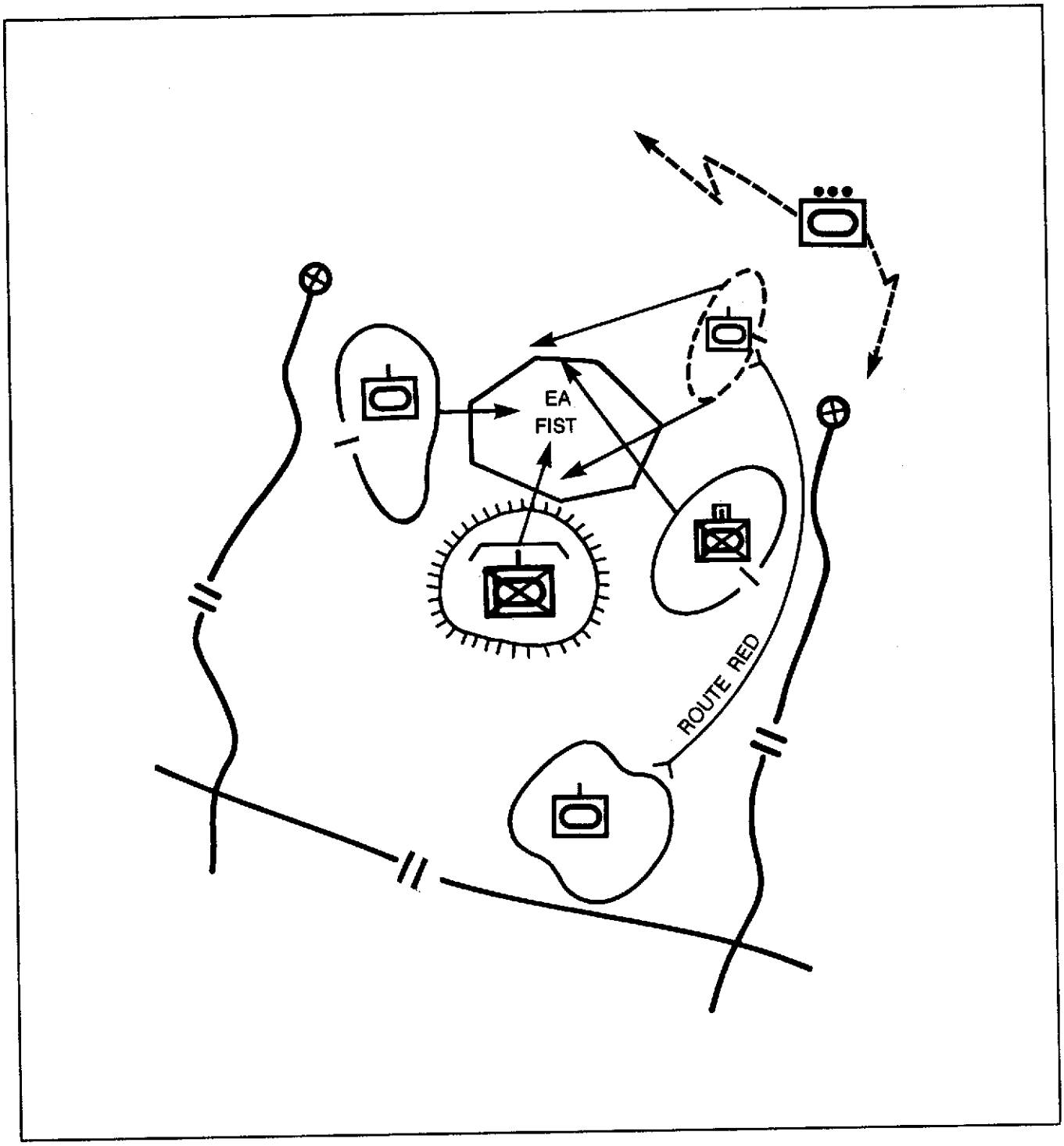


Figure 4-16. Battalion Task Force Counterattack by Fire.

When conducting a counterattack by fire and movement, you will be given an objective, an axis, and possibly an LD or an assault position to express the battalion task force commander's intent. This mission calls for thorough planning and rehearsals. Graphics enable the force to react quickly to rapid changes in the situation. As a minimum, the order for a counterattack must include –

- Enemy situation.
- Location of friendly elements.
- Axis or direction of attack.
- Formation and movement techniques.
- Consolidation instructions.
- Platoon overwatch positions or objective.

Decide whether a mounted or dismounted assault is appropriate to the battalion task force commander's intent and the situation. When conducting a dismounted assault, finish off the enemy rapidly, then quickly consolidate the objective. When conducting a mounted assault, sweep through the objective and consolidate on key terrain near the objective away from any remaining enemy elements.

Section IX. SECURITY MISSIONS

Security operations are designed to obtain information about the enemy and provide time to react, space to maneuver, and protection to the main body. In addition to the provision of local security, part or all of the company team may be required to conduct a screen operation. Depending on the mission assigned, you will be directed to accomplish one or more of the following tasks:

- Deny observation of the main defensive position.
- Destroy enemy reconnaissance.
- Deceive enemy reconnaissance as to the location of the main defensive position.
- Delay enemy flanking maneuvers.

A *screen* maintains surveillance; provides early warning to the main body; impedes and harasses the enemy with supporting indirect fires; and, within its capability, destroys enemy reconnaissance elements.

During a screening mission (see Figure 4-17), the following *critical tasks* must be accomplished:

- Maintain continuous surveillance of all high-speed battalion-size avenues of approach into the sector.
- Destroy or repel all reconnaissance patrols.
- Locate the forward support element of each suspected advance guard battalion and determine its direction of movement.
- While withdrawing, maintain contact with the forward support element of each advance guard battalion and report its activity.
- Make the maximum use of artillery and mortars to delay, confuse, and destroy the enemy.

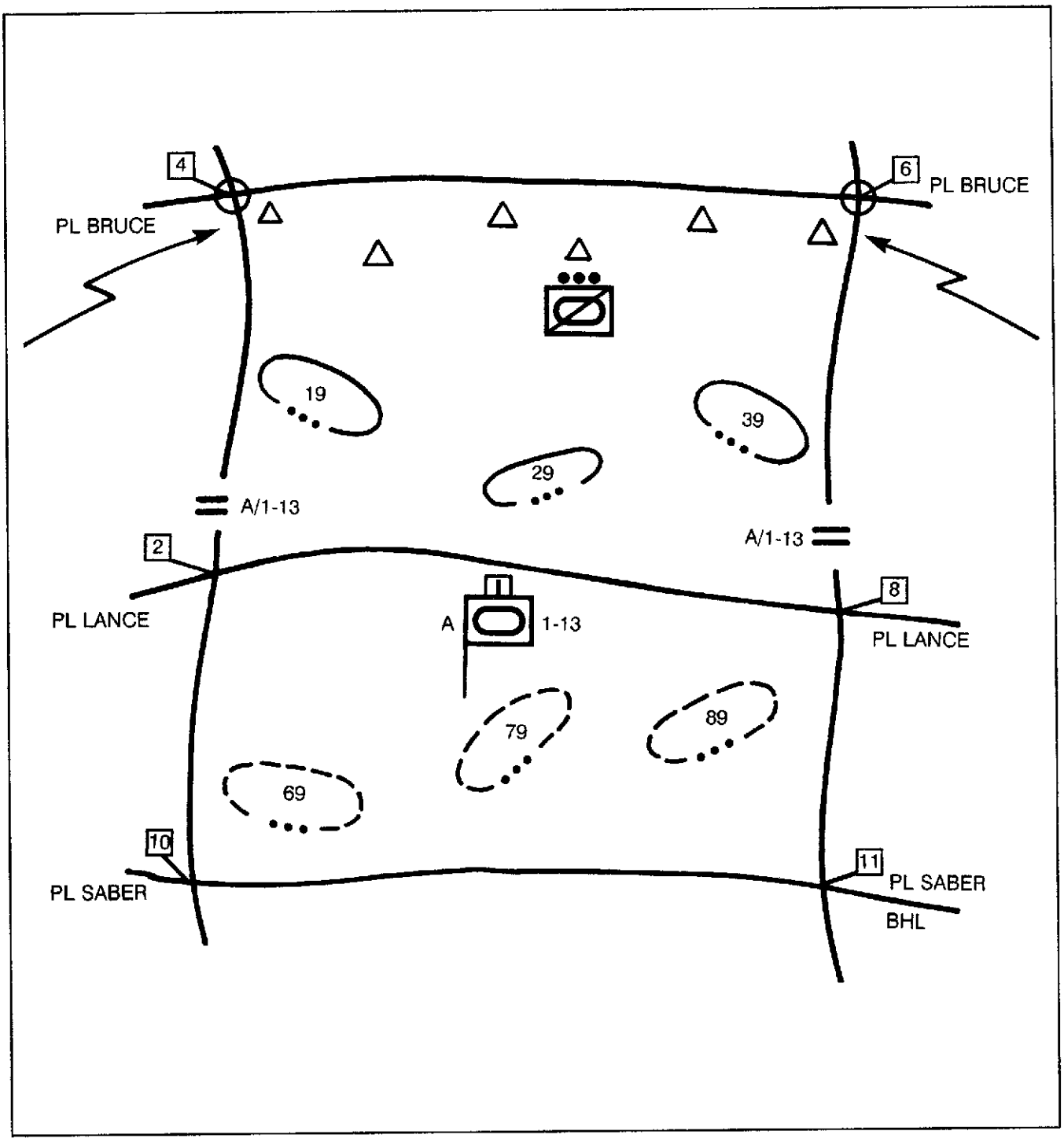


Figure 4-17. Company Team Screen.

When the company team is assigned a screening mission, you may be reinforced with the scout platoon. The security force then consists of two elements:

- Surveillance (scouts).
- Counterreconnaissance (company team).

The screen is deployed within indirect-fire range but far enough forward to detect and prevent enemy observation of the main position. If you are the screening force commander, integrate counterreconnaissance with scout surveillance.

The scout platoon will establish a surveillance line of OPs as close to the initial screen line as terrain allows. Deploy the platoons to complement the surveillance effort by positioning them in depth and orienting on the expected avenues of approach. When the frontage to be screened is very wide, augment the scouts with mechanized infantry squads or give the mechanized platoon a sector to the front. If the scouts are not available, mechanized infantry is the next best alternative for surveillance missions.

Once contact is made, the scout platoon reports the enemy's movement and maintains contact with the enemy. It also impedes and harasses the enemy with indirect fire. The scouts track the enemy's progress into the counterreconnaissance zone and hand off the enemy to the company team.

The company team destroys the enemy scouts using a combination of ambushes and hasty attacks. Eventually the screening force will withdraw into or through the main defense and, usually, occupy a rear battle position or act as the battalion task force reserve. A screening force avoids decisive engagement with the enemy forward support element or advance guard. Therefore, initiate withdrawal before these forces close on your positions. Normally, the scouts will remain along the surveillance line to report and call in indirect fires. Carefully plan and rehearse the actions of the scouts with the other platoons. If you fail to plan, rehearse, and train for the withdrawal of the scouts, they may become casualties to friendly weapons and obstacles in the heat of battle.

Normally, the company is part of the forward screen. This is a good mission for a tank-heavy team because it has the firepower to destroy enemy reconnaissance patrols rapidly. It can also be performed by BFV-heavy teams. M113-equipped mechanized infantry does not have the required firepower for a forward screen. However, mechanized infantry can screen an open flank when METT-T indicates heavy enemy contact is unlikely (see Figure 4-18).

Section X. DEFENSE DURING LIMITED VISIBILITY

Limited visibility is a normal condition on the modern battlefield. Plan and execute defensive missions so you can fight effectively in both normal and limited visibility. Thermal sights and other night-observation devices increase the company team's capability to fight in limited visibility; but for these systems to be effective, you must properly plan their use. The following techniques are useful during limited visibility:

- Adjust the positions and fire control measures before the onset of limited visibility, if possible.
- Plan and rehearse required movements to limited visibility positions.
- Redeploy fighting vehicles along high-speed mounted avenues of approach. The enemy is most likely to use roads and trails to facilitate movement, navigation, and control during limited visibility.
- Under extremely limited visibility conditions (such as thermal defeating smoke, freezing or dense fog, or massive precipitation), adjust the fire plan to cover the mounted avenues of approach. Adjust TRPs and EAs, bringing them closer to the fighting vehicle positions; or adjust the vehicle fighting positions to cover the assigned TRPs and EAs at closer range. Cover dismounted avenues with dismounted infantry, supported by as many BFVs as necessary.

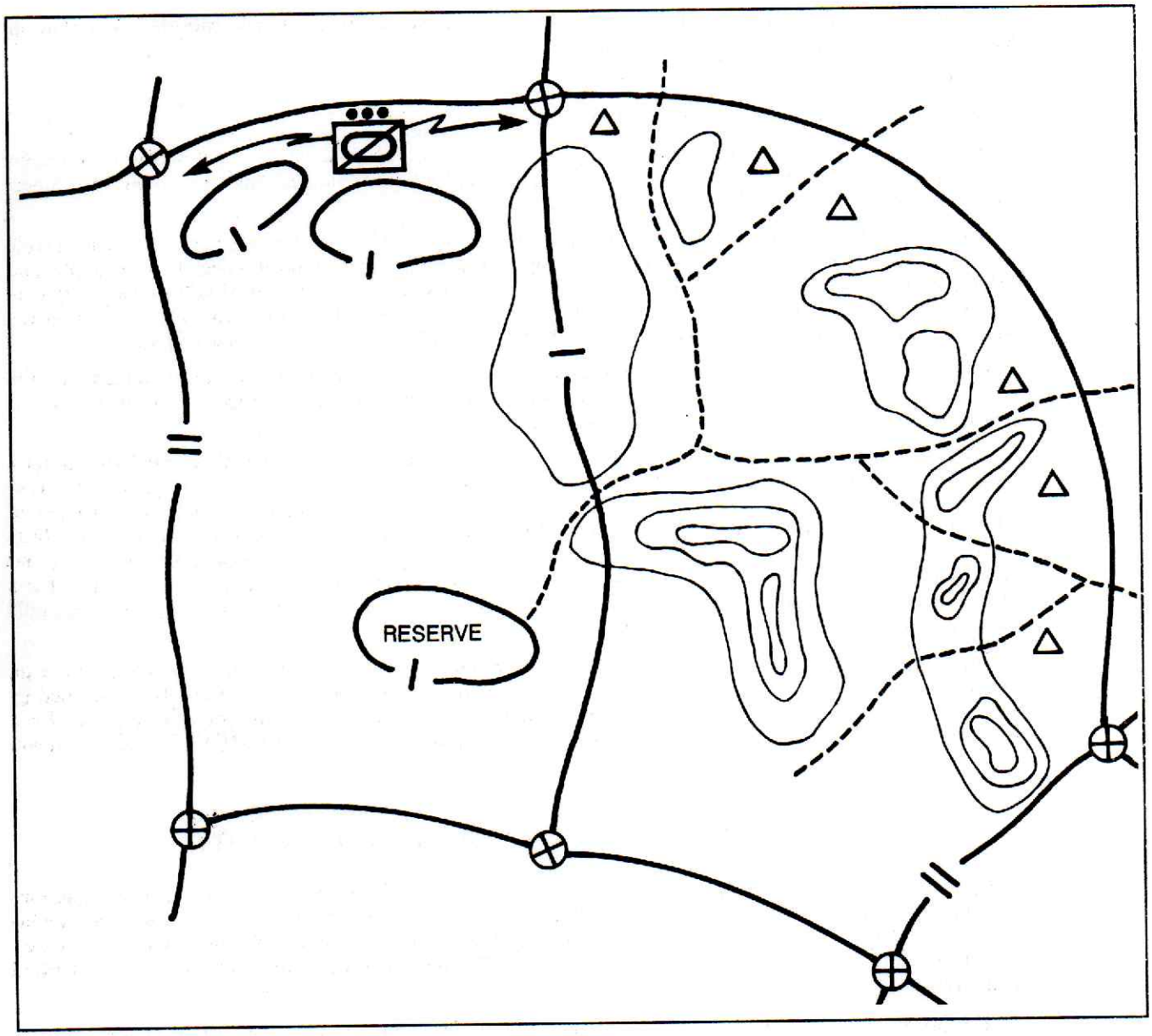


Figure 4-18. Company Team Flank Screen.

OPs are positioned far enough forward and to the flanks of friendly positions to provide early warning. OPs must be given night observation capability, a means of communication, and sufficient weapons to provide for self defense. OPs employ early warning devices (such as trip flares or tanglefoot) and point minefields to give warning and slow the enemy.

Use reconnaissance patrols to reconnoiter the areas that the OPs cannot observe. Patrol routes must be coordinated both with the battalion S2 and with all adjacent friendly units.

This chapter implements STANAG 2082.

CHAPTER 5

OTHER TACTICAL OPERATIONS

Chapters 3 and 4 describe the basic offensive and defensive missions executed by the company team. This chapter describes additional missions the company team executes to complement and support the primary missions. These actions occur separately as the company team executes its primary mission and must be performed correctly if the company team is to be successful.

Section I. RELIEF IN PLACE

A relief in place occurs when a unit is replaced by another unit. A relief in place can occur during offensive or defensive operations. The task force commander will direct when and how the relief will be conducted.

A relief in place is conducted to maintain combat effectiveness of committed units.

PLANNING THE RELIEF

When planning a relief in place—

- Issue a FRAGO immediately.
- Use an advance party composed of key leaders to conduct detailed reconnaissance and coordination.
- Adopt the outgoing unit's normal pattern of activity as much as possible.
- Determine when you will assume responsibility for the position.
- Collocate your headquarters with the relieved unit's headquarters.
- Maximize operations security to prevent detection. (Conduct the relief at night if possible.)

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- Relieve CS elements after combat elements.
- Transfer excess ammunition, wire lines, POL, and material to the incoming unit.
- Control movement by--
  - –Reconnoitering and designating routes into and out of positions.
  - –Providing guides for the incoming unit.
  - –Using organic transportation assets whenever possible.

The battalion task force will coordinate for contact points and times when the incoming and outgoing commanders can meet. During this meeting, the two commanders exchange information, conduct a joint tour of the position, and coordinate the relief. (See Figure 5-1.)

PLANNING THE RELIEF.

Use Advance Party.
Reconnoiter to Greatest Extent Possible.
Assume Outgoing Unit's Pattern of Activity.
Determine Exact Point in Relief for Transfer of Responsibility.
Collocate Command Posts with Outgoing Unit.
Relieve Combat Elements First, Then CS, Then CSS.
Transfer as Much Equipment and Supplies as Possible.
  Ammunition, communication wire, barrier materials, POL.
  Food, and water.
  Machine-gun tripods and T&E mechanisms.
  Emplaced sensors and chemical alarms.

INFORMATION EXCHANGE.

Location of Vehicle and Individual Fighting Positions.
Enemy Situation.
Outgoing Team's Tactical Plan.
  Maneuver scheme.
  Fire plan.
  Patrol routes.
  OP locations.
  Counterattack plans.
Types of Weapon Systems Being Replaced.
Time, Sequence, and Method of Relief.
Location, Disposition, and Transfer of Responsibility for Obstacles.
Supplies and Equipment to be Transferred.
Movement Control, Route Priority, and Placement of Guides.
SOI and Vinson Fill Information.

Figure 5-1. Relief-in-Place Checklist.

When planning and coordination are complete, issue the OPORD. The order will include all elements in the standard order format and will specifically designate–

- The time the relief is to begin and end.
- The method for conducting the relief.
- Critical control measures.
- When responsibility will change.
- OPSEC considerations.
- Locations and transfer of obstacles.
- Contingency plan in case of enemy attack during the relief.
- Responsibilities and requirements for transfer of supplies and equipment.

CONDUCTING THE RELIEF

There are two methods in which a relief in place may be conducted:

- Sequential relief–one element at a time (vehicles, squads, sections, or platoons).
- Simultaneous relief–all elements simultaneously.

In either of these methods, both outgoing and incoming company teams operate on the outgoing company command net. The outgoing company maintains routine radio traffic volume while the incoming unit monitors. Movement is controlled by guides. Emergencies are handled on the incoming company net. When the relief is complete, the incoming unit operates on its own net only.

Sequential Relief

This is the most time-consuming method. The relieving company moves to an assembly area to the rear of the company to be relieved. Sequential relief may be designated in any order desired–left to right, right to left, flanks to center, or center to flanks (see Figure 5-2). The relief sequentially takes place as follows:

- Collocate company team headquarters and train elements to facilitate the relief and transfer of equipment, excess ammunition, fuel, water, and medical supplies.
- Move the first relieving platoon to the positions of the first platoon to be relieved.
- Relieve each vehicle and dismounted position one at a time.
- Move the outgoing squads and vehicles to their unit assembly area behind the position.
- Once the first outgoing platoon clears its RP en route to its assembly area, move the second platoon from the relieving unit forward to the platoon it will replace.
- Battle handover normally occurs after two-thirds of the incoming combat elements are in place.
- When the second outgoing platoon clears its RP, subsequent platoons move forward to relieve the rest of the outgoing unit.
- Complete the transfer of supplies between units.

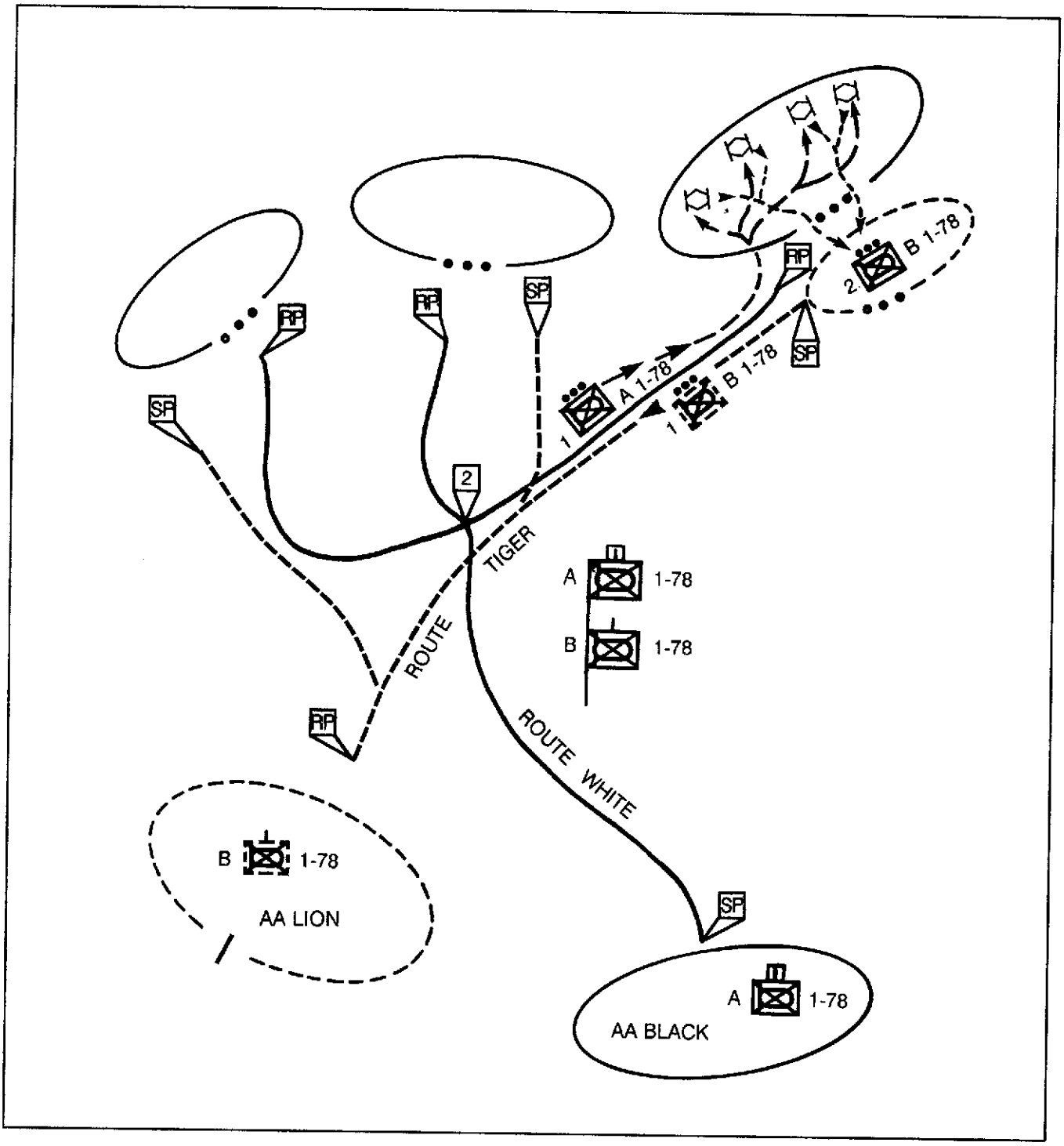

Figure 5-2. Sequential Relief in Place.

Simultaneous Relief

This is the fastest but least secure method of relieving elements (see Figure 5-3). The incoming unit may occupy the existing primary or alternate positions (vehicle and fighting). The relief takes place like the sequenced relief, except as follows:

- All incoming platoons move along designated routes to the outgoing platoon positions.
- All vehicles and dismount teams are relieved simultaneously.
- Battle handover occurs when two of the three incoming platoons report that they have completed the relief.
- Outgoing platoon elements immediately move to assembly areas behind their old positions.
- Relieved platoons immediately move to a company team assembly area.
- Relieving platoons occupy primary positions.
- Complete the transfer of supplies between units.

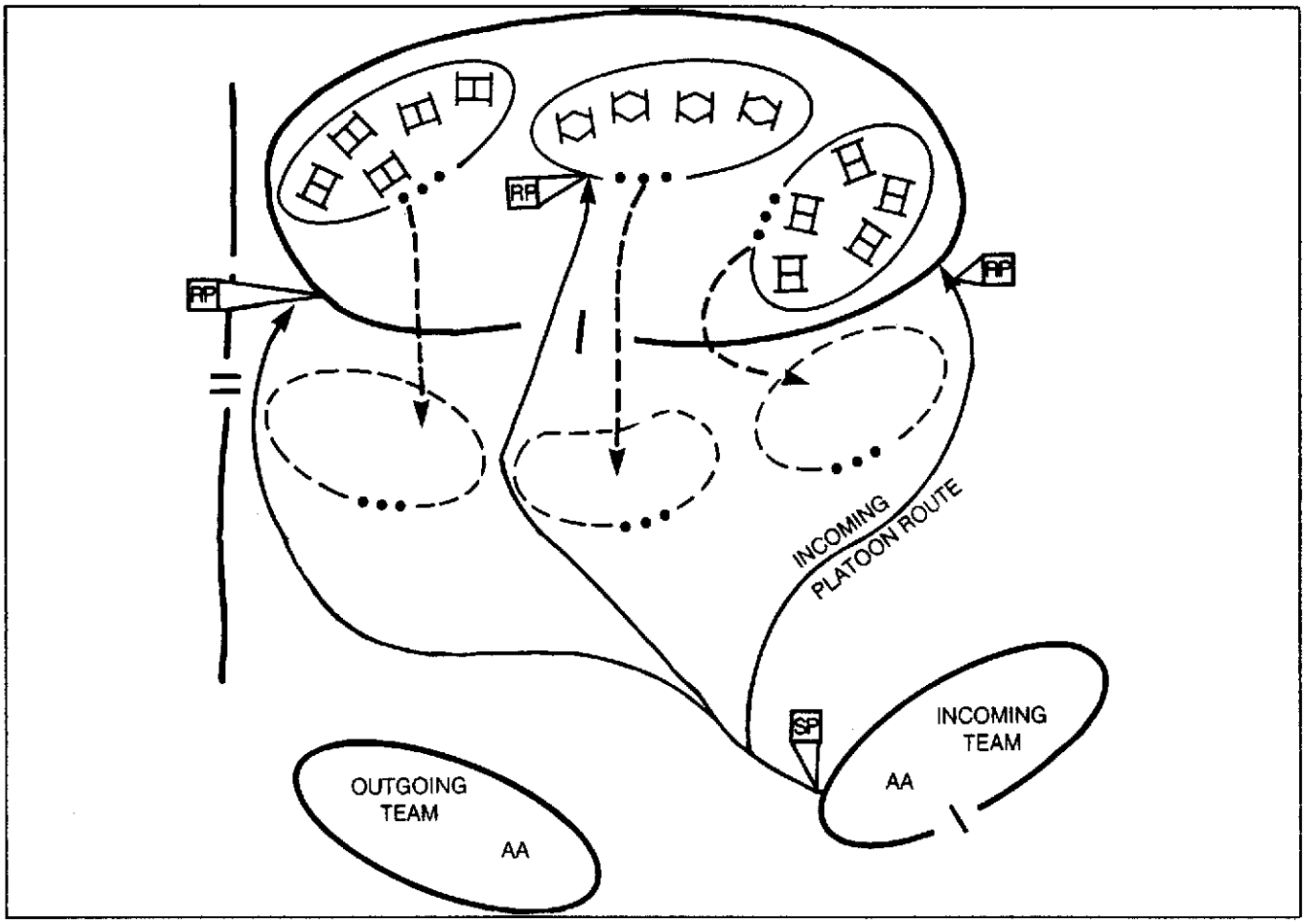

Figure 5-3. Simultaneous Relief in Place.

When relieving a company team in hide positions, the incoming company team uses a different hide position, if one exists, adjacent to the designated fighting positions. The outgoing unit departs as soon as the incoming unit has established communications, the leaders (down to dismount team) have located their fighting positions, and crews have exchanged range cards and fire plans with their outgoing counterparts. As soon as practical, the incoming company rehearses the occupation of the fighting positions.

Section II. PASSAGE OF LINES

A passage of lines occurs when one unit passes through another. Passages may be designated as rearward or forward. Patrols, security forces, attacking forces, and withdrawing forces normally conduct a passage through another force during the execution of the operation.

A passage of lines is dangerous because the concentration of forces provides a lucrative target for attack by the enemy. The passage of friendly forces under enemy pressure is especially dangerous because of difficulty in distinguishing friendly vehicles from enemy vehicles.

Before issuing the order, conduct a reconnaissance of the routes the platoons or company team will use for the passage. During the reconnaissance, meet with the other unit commander involved in the passage to coordinate. If the passage is to be done on short notice and without the benefit of coordination or reconnaissance by company team commanders, it can normally be handled by the team XOs.

During *reconnaissance and coordination*, look for and confirm the items shown in the following checklist. Take as many leaders as possible (especially the XO or the soldier responsible for final coordination of the passage) with you to help in this reconnaissance. The checklist includes the minimum information to exchange and actions to be coordinated for a passage of lines:

- Designation of unit to pass.
- Enemy situation (location, strength, recent activity).
- Mission of passing unit and tentative battle plan.
- Friendly situation and positions.
- Time of passage.
- Contact and coordination points.
- Passage points and lanes.
- Number and types of vehicles to pass.
- Vehicle identification.
- Long- and short-range recognition signals.
- Patrol routes and OP locations.
- Obstacle types and locations.
- Contaminated areas.
- Battle handover line.
- Fire support plan (direct and indirect).
- Assembly areas and attack positions.
- CS and CSS to be provided and locations of the assets.
- Routes and priority of routes.
- SOI information.

After coordination has been completed, the passage will normally occur in order as follows:

- Passing unit moves to contact point to pick up guides from the passed unit.
- Company team headquarters and trains elements are collocated.
- Guides lead passing elements through the passage lane.
- Guides leave the unit at the RP after the last friendly unit is passed.
- Passing unit deploys to execute its mission or moves to designated assembly areas.
- Battle handover may occur at different points in time and space depending on the situation and missions assigned to both units. In a forward passage of line (see Figure 5-4), the passing unit assumes control of the battle when his combat elements are through the passage point and deployed. During rearward passages, a battle handover PL is established within the direct fire and observation range of the passed (stationary) unit. The stationary company assumes the battle at the battle handover line allowing the passing company team(s) to disengage and withdraw. (FM 71-2 contains a full description of battle handover.)

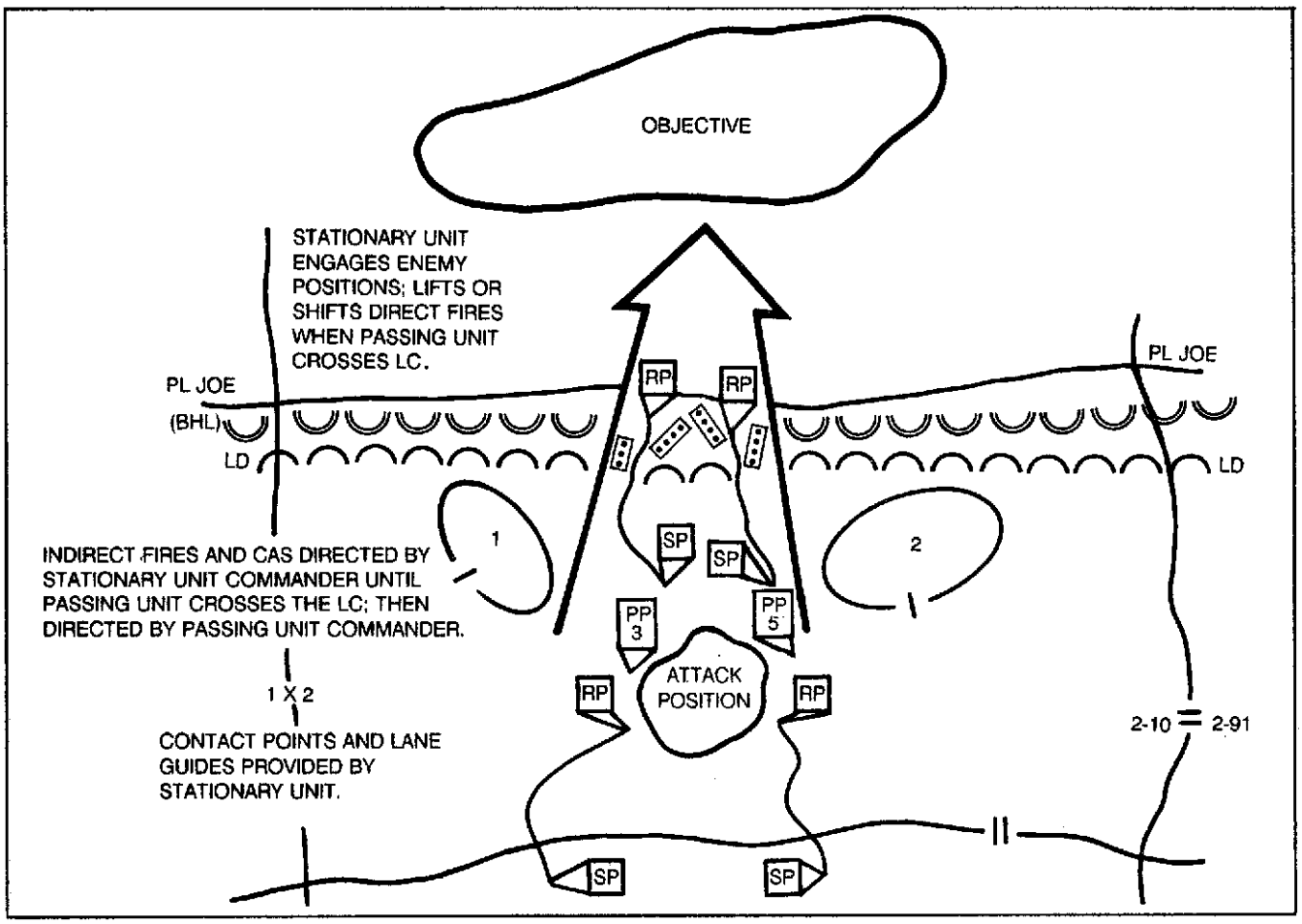

Figure 5-4. Forward Passage of Lines.

Section III. DELAY

Delay is a continuous series of defensive actions over successive positions in depth, trading the enemy space for time while retaining freedom of action. As an economy-of-force operation, delay buys time to permit something else to happen at a more critical place on the battlefield. It is probably the toughest mission you can receive. Delay is a low-frequency mission for tank companies and tank-heavy teams. It is a very low-frequency mission for mechanized-heavy forces since there is rarely time to dismount infantry squads.

CRITICAL TASKS

The critical tasks for delay includes all the tasks associated with defend in sector and the following:

- Maintain contact with the enemy.
- Preserve freedom to maneuver; avoid decisive engagement.
- As you move to the rear, cause the enemy to deploy from march or prebattle formation into attack formation successively.

TECHNIQUES

Planning and tactics for delay are similar to defense in a sector and vary only in their purpose. The flow of the delay resembles a hit-hard-then-move technique. At the enemy's normal rate of advance in massed formations, you must stop him temporarily to have any chance of disengaging. You must have a mobility advantage over the opponent. This means reinforcing the effects of terrain with obstacles, familiarity with high-speed routes of withdrawal, and rehearsal of engagements and movement.

PLANNING AND EXECUTING

Ensure Centralized Control and Decentralized Action

A delaying action is characterized by operations on a wide front with maximum forces in contact and minimum forces in reserve. In the delay, the company team must maintain enemy contact and closely coordinate flank security. This ensures that the enemy does not bypass or envelop elements of the delaying force, or penetrate and prevent the delaying mission.

Make Maximum Use of Terrain

Delaying forces use all terrain features that will help delay the enemy. When battle positions must be used, they should be located on terrain that controls likely enemy avenues of approach.

Force the Enemy to Deploy and Maneuver

Use terrain to exploit firepower. Engage the enemy at maximum range of all weapons. You may be able to trap the enemy if he moves within close range. This causes the enemy to take time-consuming measures to deploy, develop the situation, and maneuver to drive the delaying force from its position. Repeated use of this technique will slow the forward progress of the enemy and will trade space for time.

Make Maximum Use of Obstacles

Use man-made and natural obstacles to canalize and slow enemy progress, and provide security to the flanks. To be effective, obstacles must be covered by observation and fire.

Maintain Contact With the Enemy

Conduct continuous reconnaissance to establish and maintain contact with the enemy. Maintaining enemy contact requires visual observation of the enemy, observation and correction of fires, and freedom of maneuver to avoid decisive engagement or to break contact on order. Enemy forces with freedom of maneuver and mobility will try to bypass or envelop the flanks, or penetrate between units conducting the delay. To prevent penetration or envelopment, maintain contact with enemy forces.

Avoid Decisive Engagement

In a delay, occupy positions long enough to force the enemy to deploy; then develop the situation and maneuver to attack each position. A delaying force moves to the next delaying position before becoming decisively engaged. If it remains in position as the enemy launches his attack, it will become decisively engaged, the mission will fail, and the unit will sustain unnecessary losses.

TYPES OF DELAY

Delay in Sector

This mission allows the most freedom to use the terrain as you see fit. There is usually no requirement to hold key or decisive terrain when conducting a delay in sector (see Figure 5-5).

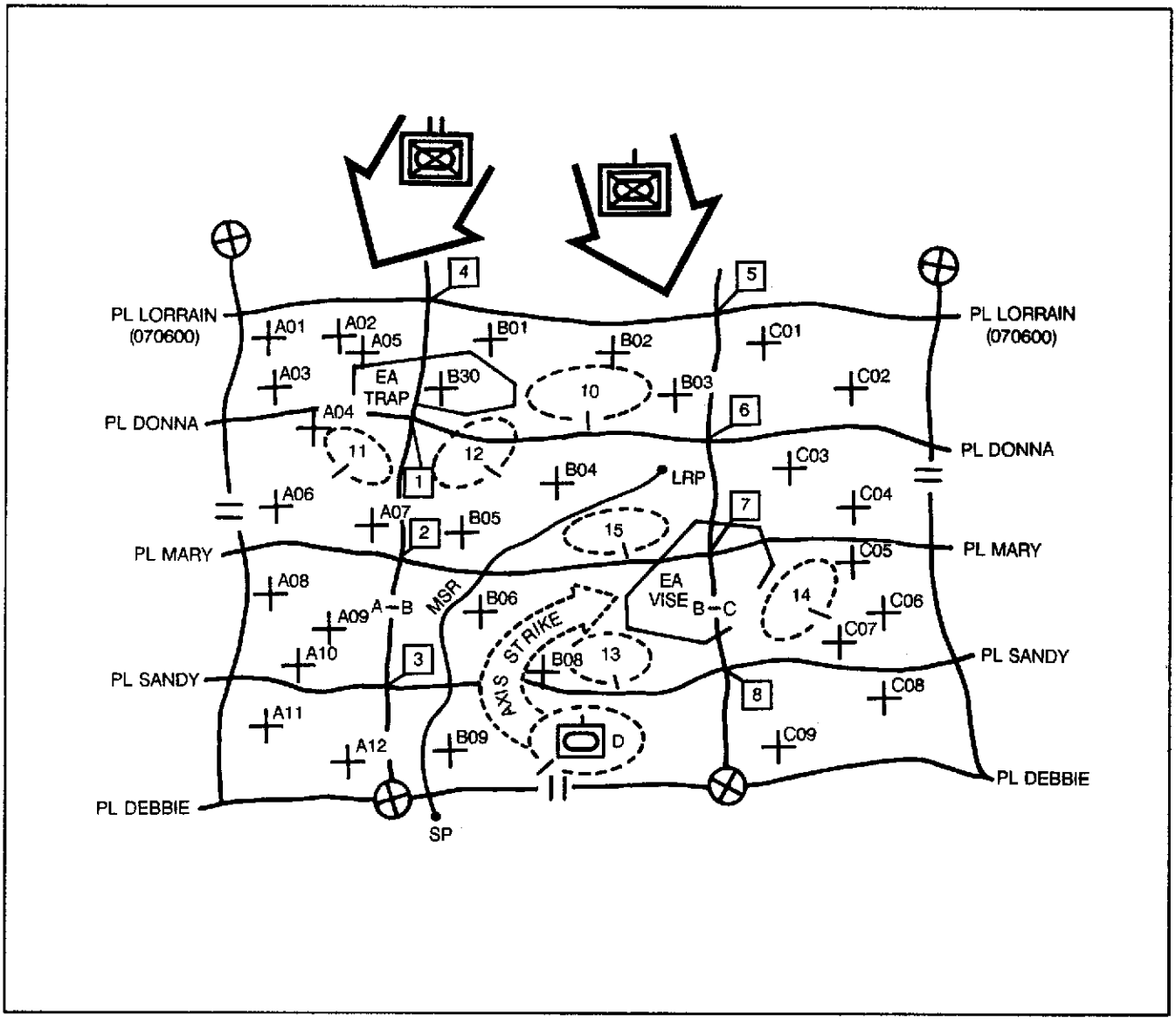

Figure 5-5. Battalion Delay in Sector.

Delay Forward of a Specified Line Until a Specified Time or Event

This is a high-risk mission that requires preventing enemy forces from reaching a specified area earlier than the specified time or event, regardless of the cost. The task force commander normally limits the maneuver from battle position to battle position, or restricts crossing a particular PL based on a specific time or event (see Figure 5-6).

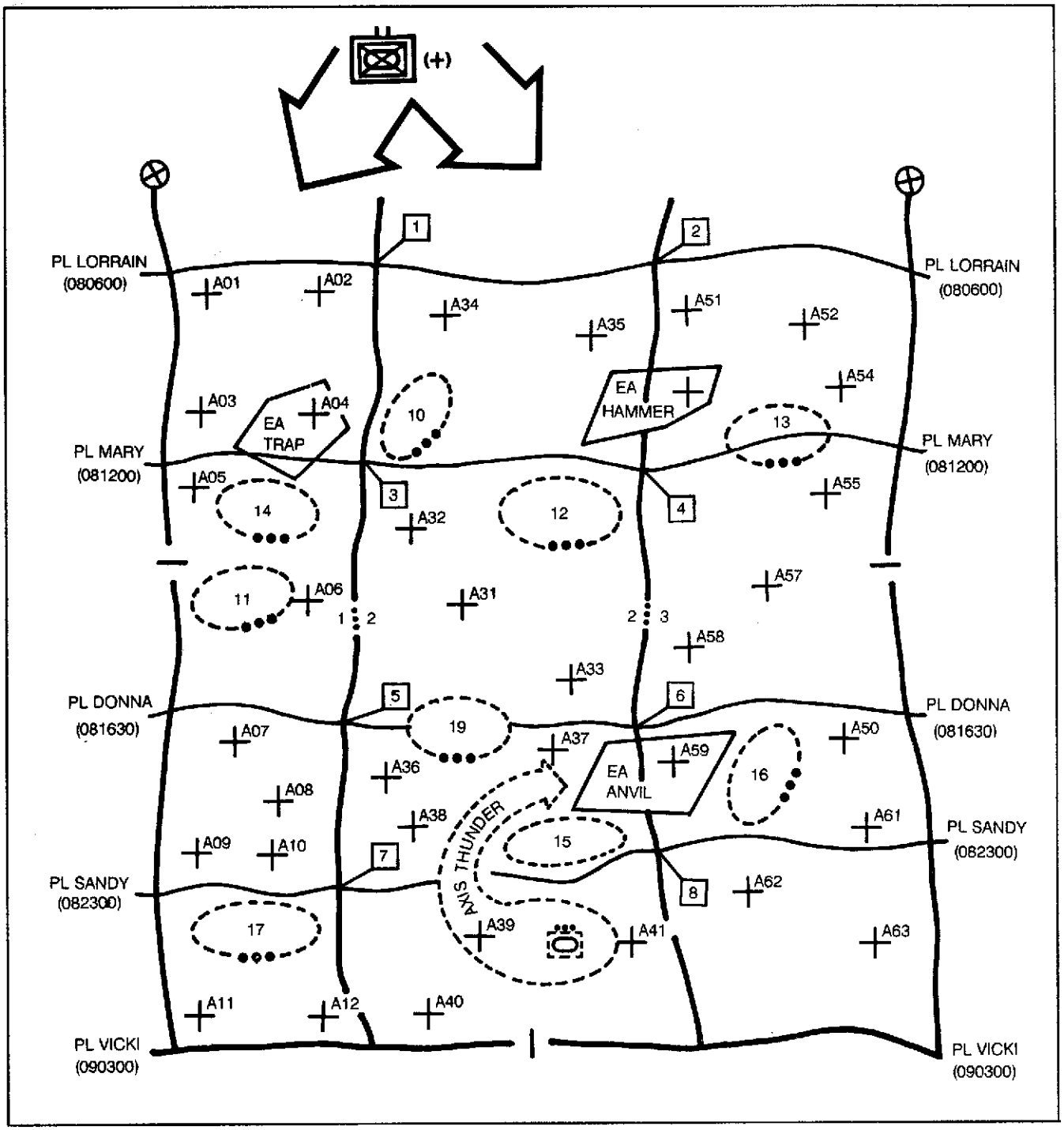

Figure 5-6. Company Delay Forward of a Specified Line for a Specified Time.

METHODS OF CONDUCTING A DELAY

Delay From Successive Positions or Phase Lines

Use this method when the mission requires covering a wide sector or avenue of approach and all or most of the forces must be deployed forward to cover the area. This method is also used when the terrain will not allow placing depth in the delay.

As the battle progresses, the company team fights from PL to PL (front to rear). The platoons disengage separately from one PL or battle position to the next while the remaining platoons provide overwatch (see Figure 5-7). The situation may force the entire company team to disengage simultaneously. If enemy forces move more quickly than expected, the possibility of becoming decisively engaged increases. Bounding within platoons is necessary when the terrain restricts the platoons' ability to provide security for one another.

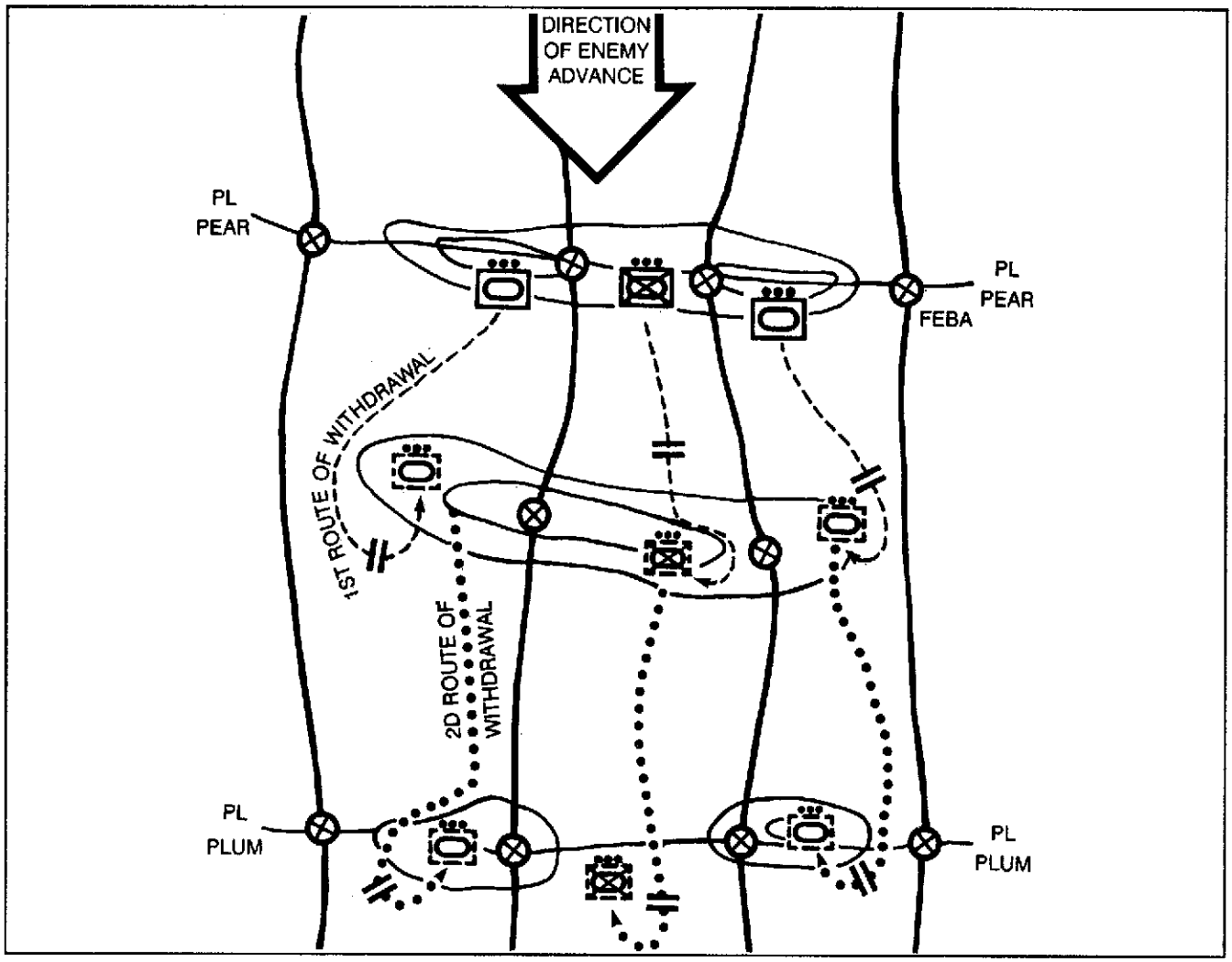

Figure 5-7. Delay From Successive Positions.

Delay From Alternate Positions

When the area is deep, and narrow enough to be covered by one or two platoons, more depth and security can be achieved by delaying from alternate positions (see Figure 5-8). This is generally a leapfrog maneuver and does not usually allow all the forces to place all weapon systems on the enemy at one time. It is more difficult to control because platoons are moving and fighting simultaneously. However, platoons have more time to establish elements in the next position because other platoons are fighting and providing security.

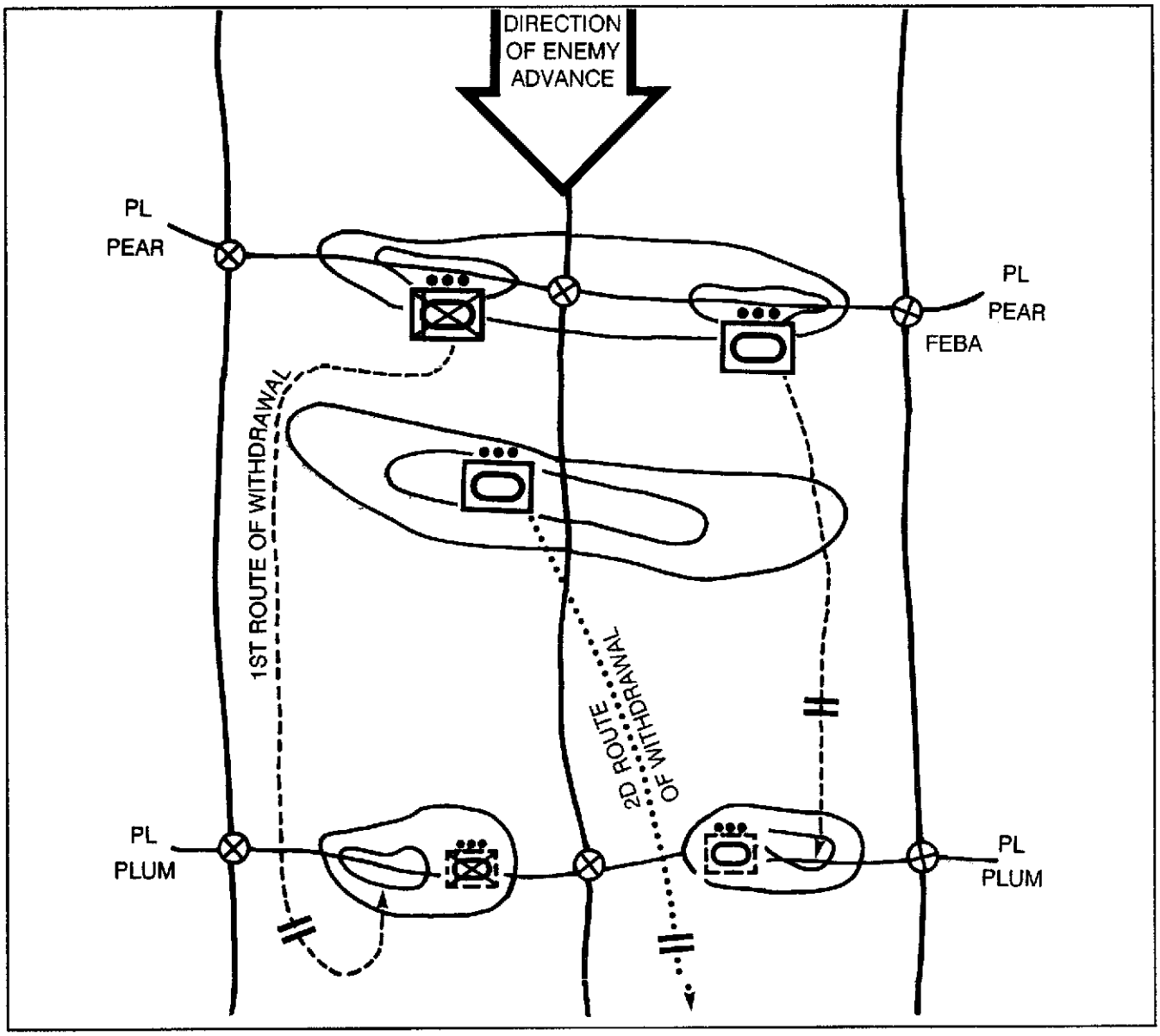

Figure 5-8. Delay From Alternate Positions.

Section IV. WITHDRAWAL

Withdrawal is a retrograde operation – a force in contact with the enemy frees itself for a new mission. Disengagement is defined as breaking contact with the enemy and moving to a point where the enemy can neither observe nor engage the unit by direct fire. Thus, disengagement is an essential part of any withdrawal.

Withdrawals may be conducted under enemy pressure or free of enemy pressure. They are performed with or without assistance from other friendly forces. A withdrawal is inherently dangerous because it often involves breaking contact with a stronger enemy force. To successfully withdraw or disengage, the company team must –

- Conceal its intentions from the enemy.
- Establish a sequence of withdrawal.
- Reconnoiter routes to ensure rapid movement.
- Allow early withdrawal of nonessential units (such as company trains) to avoid congestion on the routes of withdrawal.
- Provide for security and overwatch.
- Use obstacles to slow or stop the enemy's progress.
- Move as quickly as possible without losing control.

WITHDRAWAL FREE OF ENEMY PRESSURE

Use this technique when the unit is not under attack and does not expect to be attacked during the withdrawal (see Figure 5-9).

Deception and OPSEC are essential to the success of this operation. Several things can be done to deceive the enemy:

- Leave a small detachment in contact to make the enemy believe you are still in position.
- Maintain normal communications.
- Mask the noise of the withdrawal by artillery fire or other noise.
- Withdraw during periods of poor visibility or adverse weather (fog, rain, night).

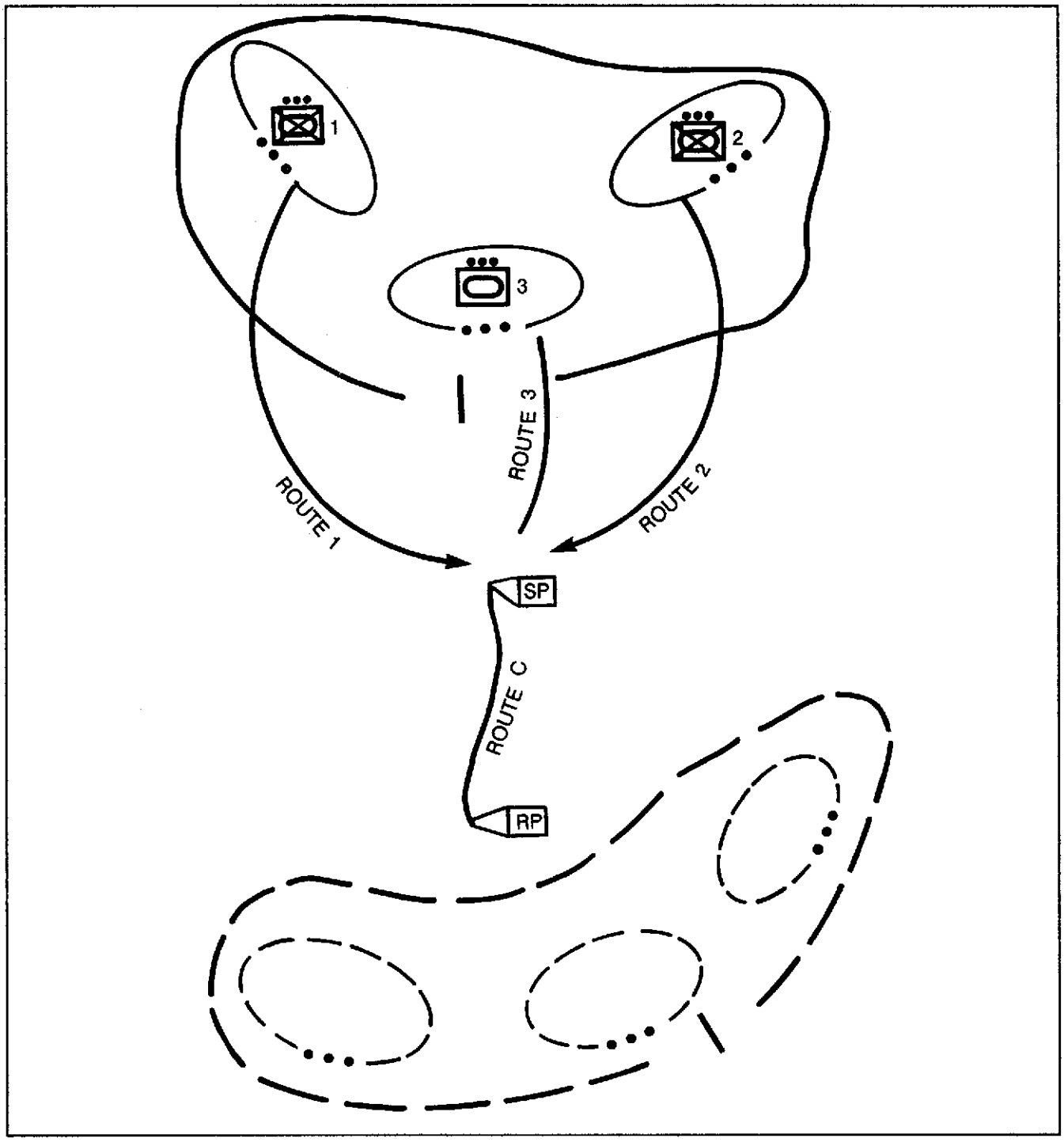

Figure 5-9. Withdrawal Not Under Pressure.

WITHDRAWAL UNDER PRESSURE

When ordered to withdraw while in contact with an attacking enemy, you are withdrawing under pressure. The goal is to preserve the unit and prevent the enemy from forcing withdrawal into a disorganized retreat.

The techniques for a withdrawal under pressure are very similar to the techniques for a delay. The difference is that, in a delay, you maintain contact with the enemy and, in a withdrawal under pressure, you conduct fire and movement to break free of enemy contact. The base of fire may be provided by an overwatch element or security force positioned to cover the withdrawal. This may be another company team overwatching the team or one platoon may overwatch the other platoons.

Section V. HASTY WATER OR GAP CROSSING

The company team may be required to cross obstacles ranging from small streams and soft ground to major rivers. Do not lose the initiative by letting the water obstacles delay you. The company team may participate in deliberate water obstacle crossings using special equipment from support units, but usually hasty water crossing operations are attempted first.

Unlike other obstacles, the location of water obstacles is usually known. Other information must be obtained, including:

- Width and depth of the water obstacle.
- Water velocity.
- Possible entry and exit points and bottom conditions.
- Enemy situation.

If the crossing is opposed, plan indirect fires and smoke to suppress the enemy, deceive him about the exact crossing point, and obscure his observation of the crossing. Once local security is established on the friendly bank, the infantry will secure the far side overwatched by tanks and BFVs (if not used to take the infantry across). Suppressive fires will reveal the crossing site and, therefore, is used only if there is opposition at the crossing site.

ARMORED VEHICLE LAUNCHED BRIDGE CROSSING

When an AVLB is available, it moves behind the lead platoon. An AVLB has no firepower and must be protected by the company team. The AVLB must not be deployed until enemy antitank weapons at the crossing site are neutralized. Although an AVLB has an extremely large signature when being erected, smoke at the crossing site will help conceal it. A crossing site commander (such as the XO) may be designated to control the physical operation of the crossing site.

The vehicles approach the AVLB as fast as the terrain allows. Vehicles slow down as they reach the near side of the bridge and take commands from an AVLB crewman or one of the soldiers acting as the ground guide. If no ground guides are present, the vehicle tracks or wheels are aligned with the bridge ramps. When crossing the bridge, the vehicles move slowly. Once the bridge is crossed, vehicles move rapidly to covered and concealed positions overwatching avenues of approach to the bridge site.

If the bridge must be crossed in limited visibility, the battalion task force will usually plan more elaborate steps. You may be responsible for executing some or all of the following measures:

- Communication at all critical points.
- OPs to provide near and far side early warning.
- Ground guides familiar with the bridge site.
- PLs to enhance control (mark with engineer tape, chemical lights, panels, or chemical heat packs).
- Navigational aids between the two track spans (filtered flashlights, panel markers, chemical lights).
- Overwatch positions to protect the bridge site.
- Emergency signals for contingencies (such as if the bridge cannot accommodate the crossing of the rest of the unit).
- Night-vision equipment to aid in control and navigation during limited visibility.

SWIMMING VEHICLES

There may be vehicles in the company team with swimming capability. When swimming a vehicle, make all preflotation checks in accordance with the operator's manual. Check the gap banks and preparation on both the near and far shores. Once in the water, keep moving. If the current is swift, drive upstream. Hit the far bank squarely and move out of the water at a steady speed. (See FM 90-13, Appendix C.)

FORDING TANKS

Without special preparation, tanks can ford water obstacles up to four feet deep if there is a solid river bottom and the banks have been prepared. The soft-ground driving techniques apply when fording a river. The river or stream bottom must be checked for obstacles that would cause the tank to throw a track.

Section VI. MILITARY OPERATIONS IN URBANIZED TERRAIN

The company team may be involved in urban combat as part of a larger force, separately in very small villages (10 or less buildings), or in lateral strip areas (along roads or highways). (FM 90-10 and FM 90-10-1 contain detailed information on operations, techniques, and technical data for conducting military operations in urbanized terrain [MOUT].) This section will describe basic characteristics of urbanized terrain, special planning considerations, and techniques of offensive and defensive operations.

URBANIZED TERRAIN CHARACTERISTICS

In general, urbanized terrain is characterized by observation and fields of fire extremely limited at ground level by buildings. Ranges can be as short as 100 meters but may extend to as much as 1,000 meters on some wider avenues. Observation may be increased on upper floors or roofs of higher buildings; but, because of surrounding buildings, this advantage is often negated due to dead space. Proper deployment and thorough reconnaissance can provide adequate hide positions for armored vehicles. Covered fighting positions will probably have to be created for defensive operations.

Urban areas are considered obstacles to maneuver warfare. Narrow streets and alleys, power and telephone lines, buildings, low-tonnage bridges, and debris from buildings destroyed in the battle present obstacles for maneuver and for the fires of most weapon systems.

Avenues of approach exist at multiple levels in urban terrain. The traditional avenues of approach follow major roads that support the movement of combined arms teams (infantry and armor). Avenues of approach also exist for dismounted (light) infantry below street level (through sewers, maintenance tunnels, and cellars), and above street level (roof tops, or through walls of closely joined buildings).

PLANNING CONSIDERATIONS

Operations in urban areas are characterized by the following:

- Detailed centralized planning and decentralized execution.
- Formation of combined arms teams at the lowest levels. This may often mean task organization of platoons, squads, and sections. Very close cooperation is required between tanks, BFVs, and dismounted infantry.
- Close cooperation and detailed planning of CS and CSS.
- Dismounted infantry is the predominant force used in urban terrain.
- Artillery is often used in a direct-fire role against point targets. Heavy mortars provide indirect-fire support. Artillery used in an indirect-fire roll will normally be positioned outside of the urban area.
- Operations concentrate on narrow frontages.
- Psychological and physical stress of soldiers and leaders is a major factor during the battle.

The following is of special interest in urbanized terrain:

- The team will expend more small arms, demolitions, and high-explosive munitions but less SABOT and TOW missiles.
- Transportation of supplies and evacuation of wounded is very difficult during the battle because of collateral damage. Prestocking supplies at key locations and strongpoints is very useful. Distribute medical supplies to the lowest level possible (teams and crews).
- The BFVs and tanks are very vulnerable to infantry attack with handheld antitank weapons and demolitions.
- Radio communications are usually poor in urban areas and must be augmented by wire communications. Public telephones, though unsecure, are often a reliable communications resource.
- Large-scale maps depicting individual buildings should be obtained when possible.
- In the defense, obstacles must be carefully planned and prioritized to make sure adequate routes are available for maneuver, counterattacks, and logistical resupply.
- Civil authorities are responsible for civilians in the area. If no civil authority is dealing with the problems of refugees and civil discipline, the MPs are responsible for their control. Civilians who volunteer may help construct positions or act as guides or interpreters.

OFFENSIVE OPERATIONS IN URBANIZED TERRAIN

While conducting other missions, the company team may operate alone in small scale MOUT operations, such as strip areas. Operations in large urban areas are done as part of the battalion task force scheme of maneuver. There are three actions that must be accomplished when attacking any urban objective (village, city block, or building):

- First isolate the enemy. Isolating the enemy denies him support from other enemy units and the ability to maneuver.
- Second seize a foothold.
- Third clear the enemy from the area you are attacking.

Clearing is the most intensive portion of the operation. It is physically and psychologically demanding and requires a high degree of skill and preparation. Clearing a building of enemy troops is an infantry task. Support the infantry with engineers (if you have them), tanks, and BFVs. Because clearing buildings is infantry intensive, tank-pure companies and tank-heavy teams will find it difficult to accomplish missions where the clearing of more than a few buildings is required.

An enemy-held area may be cleared by systematic clearance or rapid advance. Systematic clearance of an area requires that each building be cleared along a line of advance. Rapid advance is used when speed is very important and requires only those buildings with suspected or known enemy positions to be cleared as you advance.

The company team will attack in an urban area along a narrow front. The frontage will usually be too narrow to deploy all of the company team at one time. To maximize the effectiveness of the team's weapon systems, leading elements should be composed of a mix of infantry and armor vehicles (BFVs and tanks). For example, a team could organize two platoons of two infantry dismount teams, two BFVs, and two tanks. The remaining platoons would be tank- or mechanized-pure. The task-organized platoons move forward with an infantry dismount team leading and a dismount team securing the BFVs and tanks. The movement is executed by bounds with the armored vehicles following in overwatch.

The company formation will depend on the width of the sector or axis of advance and the available avenues of approach. When enemy contact is made, the lead platoons assault the enemy position. The overwatch platoon assists with suppressive fires (if possible) and then takes up the lead so the company can continue the attack while the lead platoons reorganize. This method allows you to keep up the momentum of the attack.

Organize the company team in three elements: assault element, support element, and reserve.

The mission of the assault element is to close with the enemy objective, seize a foothold, consolidate, and then clear the objective room by room. If the objective is larger than one building, this force must clear each building in the objective room by room. In this case, the assault element must be prepared to

provide its own support and breach elements. The support element isolates the objective or portions of the objective for the assault force. It provides suppressive fires and prevents reinforcement by other enemy forces. The reserve is prepared to assume the mission of either the assault or support force. They can also be used to maintain the momentum of the attack by relieving the assault platoon when it becomes physically exhausted by the clearing operation.

DEFENSIVE TECHNIQUES IN URBANIZED TERRAIN

The plan for the defense must be very detailed because of the fluid nature of urban combat. Decentralized execution is the norm in such operations.

There are two phases of the defense of an urban area: The first phase is fought forward of the town or village and the second within the urban area itself.

The first phase of a defensive operation (outside the village) is the same as in open terrain. Battle positions are designed to take advantage of all available weapon systems. The objective in this initial phase is to prevent the enemy from isolating your position, gaining a foothold in the urban area, and performing in-depth reconnaissance of the defenses. This phase of the operation will transition into an in-depth defense of an urban area if the attacker continues to commit forces in the battle.

The second phase of the operation is the defense within the urban area. This portion of the battle is the most difficult to control and plan. The defensive options within the urban area are restricted by your imagination, time, and the guidance of the battalion task force commander. The company team will be assigned either a sector, strongpoint, or battle position to defend. Because of the restricted fields of fire in urban areas, in most cases you will be given a sector to defend. There are four basic options and four techniques for employing the combat elements. The options are to –

- Defend in sector.
- Defend a battle position.
- Defend a strongpoint.
- Ambush.
- Combine one or more of the above.

Defense of a sector and defense of a battle position are the same as defense of open terrain. These options allow the flexibility to move between positions. Platoon sectors may be assigned if there are a number (not to exceed three) of critical avenues of approach (roads) through the company team's sector. Battle positions rather than sectors may also be used to control the platoons (see Figure 5-10). Battle positions are easier to control and will ensure critical terrain is contested.

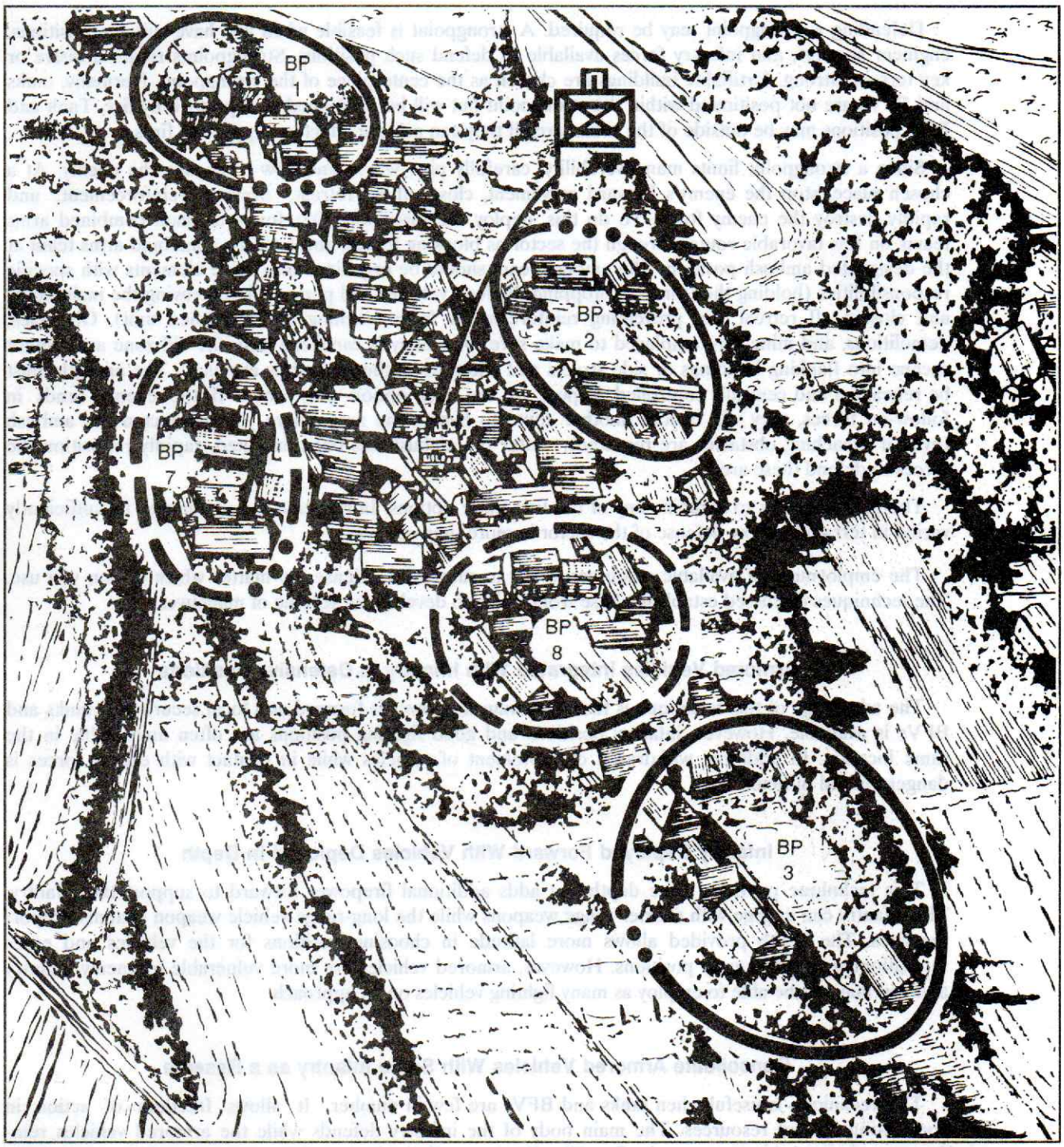

Figure 5-10. Defend in Sector (Platoons in Battle Positions).

Defending a strongpoint may be required. A strongpoint is feasible when you have suitable positions, engineer support, and infantry forces available to defend such positions. Strongpoints retain decisive or key terrain. Strong, fortifiable buildings are chosen as the centerpiece of the strongpoint. Normally, tanks and BFVs are not positioned within the strongpoint but will be positioned to support it by fire. Tank and BFV positions may be outside of the urban area if they can achieve effective supporting fires.

Since a strongpoint limits maneuverability, carefully plan where and how to engage the enemy. At a chosen place, stop the enemy's forward movement, close off his retreat, prevent reinforcement, and rapidly destroy the enemy force. To do this, deploy the force with OPs forward, small combined arms teams on less favorable routes through the sector as blocking forces, and a strong combined arms team at the designated ambush position. The ambush team should be organized into three elements with specific responsibilities (holding the front and stopping the lead vehicles and personnel, destroying the main body, and closing off retreat and preventing reinforcements from reaching the ambushed unit). Obstacles, demolitions, and mines are emplaced to make sure the enemy is canalized into the kill zone and cannot escape into flanking buildings or side streets and alleys when the ambush is executed. The ambush must be rehearsed and centrally controlled. Expect to use this option only once. If the enemy sends in follow-on forces, they will choose another route to bypass the area where you conducted the ambush (even if breaching obstacles are required). After the ambush has been executed, rapidly reposition the forces to defend these areas.

The final option is to combine any of the first three options. In this case the sector may be sufficiently varied in terrain to allow defense of the sector in more than one way.

The employment of available resources is key to successful defense, no matter which option you use. The techniques discussed establish a base from which to develop the scheme of maneuver.

Armored Vehicles Integrated With Infantry in Defensive Positions

The advantage of this technique is that maximum firepower is forward and local security for tanks and BFVs is available. However, infantry positions and good fighting positions are often unavailable in the same location. In addition, withdrawal or movement of vehicles while in contact with enemy forces is dangerous and difficult.

Infantry Deployed Forward With Vehicles Deployed In Depth

This technique provides more depth, yet adds additional firepower forward to support the infantry. The infantry can engage with shorter range weapons while the long-range vehicle weapon systems support the fires. The depth provided allows more latitude in choosing positions for the vehicles and eases repositioning to subsequent positions. However, armored vehicles are more vulnerable to enemy infantry and you may not be able to employ as many fighting vehicles on an approach.

Consolidate Armored Vehicles With Some Infantry as a Reserve

This technique is useful when tanks and BFVs are few in number. It allows freedom of action in committing limited resources. The main body of the infantry defends while the armored vehicles reinforce, counterattack, or support by fire. The XO is usually in charge of the reserve. In this case, a single radio net for the reserve would be practical. Commitment of the reserve is a critical event in the battle;

the commander must be informed. The reserve should rehearse its actions prior to the battle. When you reinforce a specific position, coordination is essential. Specified routes must be established. A point where the armored vehicles can link up with the force to be reinforced must be established. This point should be covered and concealed but allow for visual reconnaissance of the positions to be occupied. A guide from the element being reinforced should direct the reinforcing vehicles into position.

Armored Vehicles at Separate Positions With Separate Missions From the Dismounted Infantry

This technique allows deploying the weapons and personnel to the best advantage of the individual systems. This is the least favored technique because it does not allow for mutual support between the armored vehicles and dismounted infantry. An example of this technique would be the employment of infantry in strongpoints in the depth of the sector, while armored vehicles delay rearward occupying final positions that orient on a secondary avenue of approach.

This chapter implements STANAGs 2099, 2147 and 2963.

CHAPTER 6

COMBAT SUPPORT

To achieve its full combat potential, the company team must synchronize its fire and maneuver with all available CS assets. CS enhances and multiplies the effects of the company team's combat power. CS assets include fire support (mortars, field artillery, army aviation, tactical air, and naval fire), antiarmor, engineer, air defense, intelligence (including reconnaissance and ground surveillance radar), signal, chemical, and military police units. One or more of these units may be task-organized (attached, OPCON, or direct support) to the company team. A company commander must be able to employ these scarce resources properly and effectively. This chapter will tell you what you must know and where to look for additional information about each kind of CS.

Section I. FIRE SUPPORT

In war, maximum combat power results from the most effective use of firepower and maneuver. These elements are inseparable, and both are equally important in the battle.

Fire support is the collective and coordinated use of indirect-fire weapons and armed aircraft in support of a battle plan. Fire support is provided by mortars, field-artillery cannons and multiple-launched rocket system (MLRS), Army aviation, close air, and Naval gunfire (NGF). Employ these means to support the scheme of maneuver; mass firepower; and delay, disrupt, or destroy enemy forces. Tanks and air defense weapons also have a secondary ability to provide limited indirect-fire support. A company team commander must know what the field artillery and mortars can do. He must thoroughly understand the fire support system, be able to plan and use indirect fires as effectively as the company team's organic weapons, and be able to direct the company's maneuver.

Fire support destroys, neutralizes, and suppresses enemy weapons, formations, or facilities. Smoke obscures the enemy's vision, degrading the effectiveness of his direct- and indirect-fire weapons. High explosive and DPICM cause enemy tanks and other armored vehicles to button up and slow down. This

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reduces the enemy's observation, flexibility, momentum, and command and control. Indirect-fire support extends battlefield depth, wears down enemy forces, and inflicts damage well beyond direct-fire ranges without exposing friendly tank and infantry fighting positions and vehicles.

FIRE SUPPORT OFFICER

An FO, FSO, and fire support coordinator (FSCOORD) are provided at every level from infantry platoon and tank company through corps. (The composition, equipment, and organization of the company FIST are discussed in Chapter 1.) The company FSO commands the FIST. He is the technician who translates guidance into a written fire plan, coordinates that plan with the task force FSO, and assists in executing the plan. The company team commander makes the final decisions regarding the company fire support plan.

The FSO habitually accompanies the commander to receive the task force order so both will hear the task force order and the task force commander's intent. After the formal OPORD brief, the company FSO meets with the task force FSO to ensure thorough understanding of the task force fire plan. During the return trip to the company, the commander and the FSO can discuss the impending operation and refine mutual understanding of the company's mission.

The task force fire plan will include specific guidance concerning company responsibilities in executing the task force fire plan. The plan will specify where, when, and what targets to shoot; and should specify any special requirements of the company, such as adjusting FPFs. The fire plan originates at task force level and is modified and expanded based on company input.

The task force fire support plan may designate tasks for the company that require the FSO to occupy a vantage point separate from the company. For instance, an FSO can rarely observe and adjust fires from defilade or hide positions that may be occupied by the company. Additionally, company teams in reserve, in counterattack positions, or trailing the task force in offensive maneuvers may lose their FSO to provide fire support to the task force scout platoon. In mechchanized-heavy task forces, the antitank company has no FSO. When the company does not have an FSO, the commander must plan the company fire support. Therefore he must be able to read and implement the fire support plan and execution matrix. He must also understand the capabilities and limitations of the most common indirect-fire systems.

INDIRECT FIRE SYSTEM CAPABILITIES

Mortars

The battalion task force heavy mortar platoon has six tracked 4.2-inch (107-mm) mortars and a fire direction center (FDC). The platoon usually operates as a six-tube platoon but can split into two three-tube sections, each with its own FDC. Mortars are the most responsive indirect-fire system for killing dismounted infantry. They put out a high volume of fire and are also excellent for—

- Engaging targets in defilade or dead space.
- Suppressing enemy weapon systems, especially ATGM sites.
- Emplacing white phosphorous smoke on or near enemy positions (obscuration) or between friendly and enemy positions to conceal movement (screening). The quick response and excellent smoke characteristics of white phosphorous rounds make this an ideal mission for mortars.

- Illuminating enemy and terrain. Because night-vision equipment is limited, illumination is particularly important when friendly infantry is dismounted. Illumination is also used during periods of limited visibility to mark targets for CAS and attack helicopters, adjust artillery fire, and designate reference points for navigation. Illumination on top of enemy positions can blind enemy passive night-vision equipment and temporarily destroy his night vision, while exposing his positions. Illumination behind an objective silhouettes enemy positions, vehicles, and personnel.

The chief disadvantages of mortars are their relatively short range and limited ammunition-carrying capability. (FM 7-90 has additional information on the mortar platoon.)

Field Artillery

Field artillery is the principal FSE. A variety of weapon systems are available to support the task force and, therefore, the team. The three most common types of artillery that may support a mechanized or armored force are the M109 (155-mm), M110 (203-mm), and the M270 (227-mm) MLRS. It is important to know which systems are supporting the task force because all ammunition types are not available for all weapons. Family of scatterable mines (FASCAM) and Copperhead, for instance, are available only in 155-mm; there are no smoke or illumination rounds for 203-mm howitzers. (Figure 6-1 lists weapons and ammunition available.)

Field artillery can perform the same missions as mortars (subject to the munitions restrictions noted in Figure 6-1). Generally, field artillery has a greater ability to mass fires on a target, to vary the types of munitions and fuzes to achieve optimum effect, and to fire at much longer ranges than mortars. Additionally, field-artillery-delivered FASCAM provide the capability of emplacing a minefield quickly. FASCAM are engineer obstacles that are emplaced by 155-mm howitzers. Employment of FASCAM is not delegated below maneuver battalion level.

Copperhead is the name of a terminally homing point target artillery round. Copperhead guides into a target designated by a ground or airborne laser designator. The ground-based designator is on the company FSV and with the combat observation lasing team (COLT).

Effects of Fire

Decide what lethal effect fire support must have on a particular target. There are three types of fire:

- Suppression—fire on or about a weapon system to degrade its performance. The effect of suppressive fires usually lasts only as long as the fires are continued.
- Neutralization—fire delivered to render the target temporarily unusable or ineffective. Experience has shown that 10 percent or more casualties may neutralize a unit. The amount of ammunition required to neutralize a unit will depend on factors such as the state of enemy morale, standard of training, and degree of protection.
- Destruction—fire puts the target out of action for a prolonged period of time. Depending on the type, morale, and discipline of the enemy force, 30 percent or more casualties normally will render a unit ineffective. Direct hits are required to destroy hard materiel targets. Targets must be located by accurate map inspection, indirect-fire adjustment, or a target acquisition device.

Artillery can also produce nonlethal effects by using illumination and smoke munitions.

CALIBER	60 mm	81 mm	107 mm	105 mm	155 mm	203 mm	155 mm	227 mm
MODEL	M224	81	M30	M102	M109A3	M110A2	M198	MLRS
MAX RANGE (m)	3,500	4,789	6,840	11,500	18,100	22,900	22,400	30,000
PROJECTILE	HE, WP, ILLUM, BE	HE, WP, ILLUM, BE	HE, WP, ILLUM, CHEM, BE	HE, WP, ILLUM, HEP-T, APICM, CHEM, APERS, RAP, BE	HE, WP, ILLUM, SMK, CHEM, NUC, RAP, FASCAM, CPHD, AP/DPICM, BE	HE, APICM, CHEM, NUC, DPICM, RAP	HE, WP, APICM, SMK, CHEM, NUC, RAP, FASCAM, CPHD, DPICM, ILLUM, BE	DPICM
MAX RATE OF FIRE (rd/min)	30	30	18	10	4	1.5	4	12
SUSTAINED RATE OF FIRE	5	8	2	3	1	.5	*	**
RANGE OF RAP (m)				15,100	23,500	30,000	30,000	
MIN RANGE (m)	75	70	920	DIRECT FIRE				8,000
FUZES	MO***	PD, VT, TIME, DLY	PD, VT, TIME, DLY	PD, VT, MT, MTSQ, CP, DLY	PD, VT, MTSQ, CP, MT, DLY	PD, VT, CP, MT, MTSQ, DLY	PD, VT, MTSQ, CP, MT	ELECT, TIME

*2 RPM or as determined by thermal warning device.
**Determined by FDC.
***MO – Multioption – VT, PD, DLY.

LEGEND:
AP – Armor Piercing
APERS – Antipersonnel
APICM – Antipersonnel Improved Conventional Munitions
BE – Base Ejection
CHEM – Chemical
CP – Concrete Piercing
CPHD – Copperhead
DLY – Delay
DPICM – Dual Purpose Improved Conventional Munition
FASCAM – Family of Scatterable Mines
HE – High Explosive
HEP-T – High Explosive Plastic Tracer
ILLUM – Illumination
MLRS – Multiple Launched Rocket System
MT – Mechanical Time
MTSQ – Mechanical Time Super Quick
NUC – Nuclear
PD – Point Detonating
RAP – Rocket Assisted Projectile
SMK – Smoke
TIME – Adjustable Time Delay
VT – Variable Time
WP – White Phosphorous

Figure 6-1. Indirect-Fire Capabilities.

FIRE SUPPORT PLANNING

Maneuver Commander's Intent

Make sure the intent for maneuver and fire support is clearly understood by the FSO. Identify the role of fire support in the scheme of maneuver (when, where, what, and why) by providing detailed guidance to the FSO explaining the concept of the operation, scheme of maneuver, and tasks for fire support. *Do not abdicate the fire plan to the company FSO.* The FSO must understand the maneuver plan as well as the commander understands it.

Providing this level of guidance is not easy. Artillery fires are not instantaneous. Three to seven minutes are required to process routine targets and get fires in the target area. Planning must adjust to reflect this lag time. While wargaming the maneuver, refine the critical targets or EAs, priority of targets, priority of engagement, sequence of fires, and results desired. You will then be able to see when and how to synchronize direct and indirect fires to achieve the maximum destruction of the enemy and the greatest protection of the force.

One unit should be designated to have priority of fires. This is one way to weight the company's main effort. It also prioritizes requests when two or more units want fires at the same time. The unit with priority overrides other requests for fire. Designate where to place obscuration or illumination, suppressive fires, and preparation fires. See the battlefield, both literally and figuratively, to decide how to maneuver, where to engage the enemy, and what fire support is needed. This is probably the most difficult thing you have to learn to do.

Fire Support Planning Process

While developing and refining the tactical plan, the FSO is concurrently developing and refining the fire support portion of that plan. The FSO does not wait for you to complete the scheme of maneuver but inputs fire planning as the scheme of maneuver is being developed.

The company FSO builds the fire plan using deliberate or hasty fire support planning, depending on the time available. In either case, targets must be placed in the fire support planning channels as soon as possible so they can be processed at the battalion FSE or battery FDC. (Detailed information on the two methods of fire support planning can be found in FM 6-20.)

Regardless of which planning method is used, the company team fire support plan must include –

- Target number and location.
- Primary and alternate persons responsible for shooting each target.
- Radio frequency and call sign to use in requesting fires.

- Priority of fires in the event of two units requesting fires at the same time.
- Size, location, and emergency signal to begin FPF.

Other information may be included as necessary or appropriate.

The company FSO does most of the company fire planning; however, he may receive targets and target information from platoon leaders, platoon FOs, and the task force FSO. The commander and FSO should not plan too many targets. A company team should normally anticipate planning no more than five or six targets and one FPF. More than this clogs the fire support planning channels and adds clutter to the company graphic overlay. This may vary depending on the mission and the extent of the task force fire support plan.

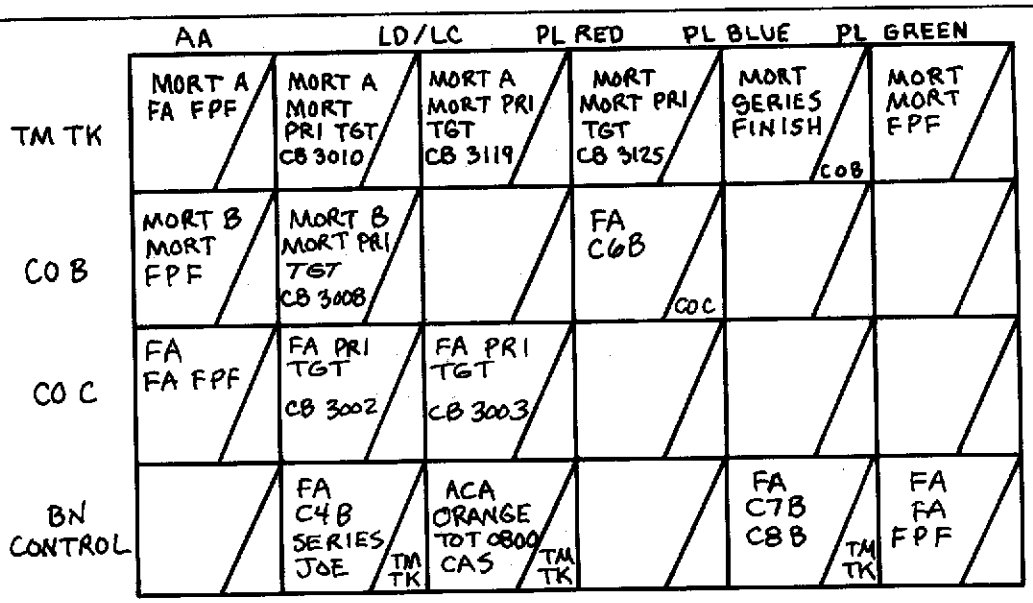
The company FSO will complete the fire plan and brief the commander to obtain approval. He may alter the plan or approve it as is; the commander makes the final decision. When the plan is complete, the FSO will make sure targets are passed to the task force FSE where the fire plans are consolidated and integrated into the task force scheme of maneuver.

The FSO must make sure platoon leaders and FOs are thoroughly familiar with the fire plan. He should also provide target overlays to the platoon leaders, FOs, and the commander. The company team fire support plan may also be disseminated as a target list and a fire support execution matrix. This must be done in sufficient time to allow subordinates to brief the platoons and sections. (A good plan given with the company order is better than a perfect plan handed out at the line of departure.)

Task force fire support plans are routinely distributed in matrix format. The fire support planning and execution matrix is a concise, easy planning tool showing the many factors of a complicated fire support plan. The fire support planning and execution matrix may aid the company FSO and the commander in understanding how the fire plan supports the scheme of maneuver. It is a valuable planning tool for both the offense and the defense. It explains what aspects of the fire support plan each FSO or FO is responsible for and at what time during the battle these aspects apply.

The advantage of the matrix is that it reduces the plan to one page, simplifies the plan, and clarifies the plan. The matrix also directs execution responsibilities and reduces the possibility that planned fires will not be executed. Dissemination of the fire plan is the responsibility of the commander. The commander and key subordinate leaders must understand the categories of targets and how to engage those targets to create the desired result.

(Figure 6-2a and Figure 6-2b show one type of matrix, set up with the maneuver elements along the left side and different phases [PLs, events, or times] of the mission along the top.)

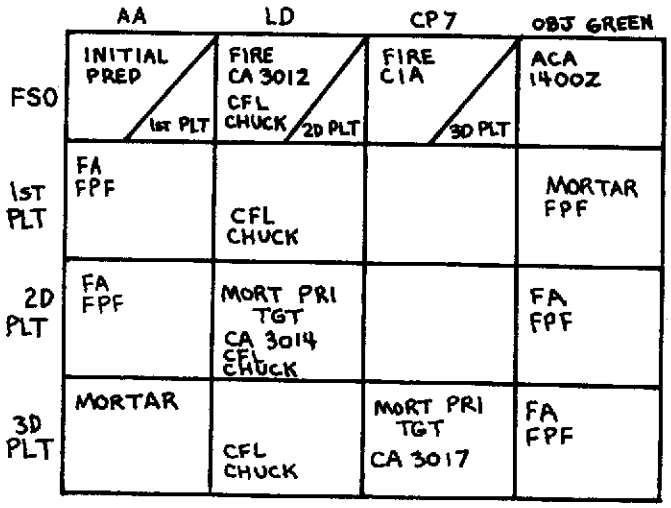


As the units depart the assembly area (AA) toward the LD/LC, priority of field artillery fires is picked up by the battalion; Group C48 and Series Joe are initiated by the company FSO as directed by the battalion commander. If communication with the FSO is lost, the lead company has the option to initiate these fires (as specified by the unit SOP). Priority of fire from the mortar sections remains the same as in the AA. Company C, the lead team at this point, has been allocated CB3002 as a priority target. Team Tank and Company B have mortar priority for targets in their respective sectors and have targets designated as shown in the matrix.

The following information is shown on a task force fire support planning and execution matrix:

- The FPF preceded by the type of indirect-fire means to be used to fire that FPF will appear in the center of the box (FA FPF).
- A priority target allocated to a team will appear in the box preceded by the means of fire support to fire the target (FA PRI TGT). Once a target is determined as the priority target, the corresponding target number is placed in the box (FA PRI TGT CB3002).
- If a certain company FSO is responsible for initiating specific fires, the target number, group, and series will be listed in the box for that FSO (FA C4B Series JOE).
- Backup execution responsibility is indicated in the lower right corner of the appropriate box (TM TK [Team Tank]).
- Other factors that apply to a certain team during a specific time frame may also be included in the appropriate box. General guidance is issued in the written portion of the operation order.
- Any additional explanation of a particular aspect of the fire support execution matrix may be included in a separate remarks section.

Figure 6-2a. Task Force Fire Support Planning and Execution Matrix.



This is an example of a completed fire support matrix for a company deliberate attack. In the AA, a field artillery FPF is allocated for 1st and 2d platoons; 3d platoon has been allocated a mortar FPF; 2d platoon has priority of mortar fires from the line of departure (LD) to Checkpoint 7. From Checkpoint 7 to Objective Green, 3d platoon has been allocated a mortar priority target and has designated it as CA0017; 2d platoon is backup for execution. 1st platoon has been allocated a mortar FPF; 2d and 3d platoons have been allocated field artillery FPFs.

At company level, information in each box of the matrix includes—

- Priorities of indirect fire support to a platoon will appear in the upper left corner of the appropriate box (FA).
- The type of indirect fire means responsible for firing the FPF will appear in the center of the box (FA FPF).
- Priority targets allocated to a platoon will appear in the box preceded by the means of fire support responsible for engaging the target, and followed by the target number (MORT PRI TGT CA3014).
- If the company FSO is responsible for the initiation of specific fires, the target number, group, or series designation will be listed in the box for the FSO (FIRE 4 CA3012). Specific guidelines concerning fires not included on the target list work sheet will be included in that box.
- Alternate element responsible for execution of specific fires will be listed in the lower right hand corner of the box (2D PLT).
- Each fire support measure to be placed in effect followed by a word designated for that measure will be shown in the box (CFL CHUCK). For airspace coordination areas (ACA), the time the planned CAS or attack helicopters are due in place is listed (ACA 1400Z).
- Other factors that apply to a certain platoon during a specific time may be included in the appropriate box. General guidance is issued in the written portion of the operation order.

Figure 6-2b. Company Team Fire Support Execution Matrix.

Targets

Target is the most fundamental term used in fire support planning. A target can be personnel, vehicles, material, or terrain that is designated and numbered for reference or firing. Every target can be classified as either a target of opportunity (appears during combat, no attack has been planned) or a planned target (fire is prearranged, the degree of prearrangement will vary, but some prior arrangement has been made). Individually planned targets may be further subdivided into either scheduled or on-call targets. A scheduled target is a planned target to be attacked at a specified time. An on-call target is a planned target on which fire is delivered when requested.

A priority target is one that could decisively affect the accomplishment of the unit mission. The brigade commander may allocate artillery priority targets to subordinate task forces. Task force commanders may in turn allocate priority targets to his subordinate company teams. Normally, priority targets are designated by the company team commander (with the recommendations provided by FIST personnel). An FPF could be an example of a priority target.

When the task force commander designates priority targets, he should provide specific guidance to the FSO and his subordinate company teams as to when certain targets become priority targets, when they cease to be priority targets, the desired effects on the targets, and any special type of ammunition to be used. Firing units lay the guns on priority targets when they are not engaged in a fire mission. This reduces reaction time. Generally, each field artillery battery will lay on one priority target. In dedicated battery operations, one platoon may lay on a priority target while the rest of the battery supports the maneuvering unit. FPF is an example of a priority target in a defensive situation.

A target number is assigned to each planned target by the company FSO. Blocks of alphanumeric target numbers (two letters and four numbers) are provided for all fire-planning agencies. They serve as an index to all other information regarding a particular target, such as location, description, and size. All TRPs that are targeted by the company FSO are assigned target numbers. Mortar sections have blocks of target numbers so they can assign a target number when an observer directs "record as target" upon completion of a registration.

A *standard target* is an area approximately 100 meters in radius. The symbol for a standard target is a cross. It may be canted if several targets are close to each other or when the symbol might be confused as a grid intersection. The intersection of the lines marks the center of the target. The target list describes the nature of the target and other pertinent information. (This applies to targets planned for conventional and improved conventional ammunition.)

- Offensive application. These targets should be used to attack known, suspected, or likely enemy positions such as OPs, antitank sites, road intersections, or terrain that dominates attack axes.
- Defensive application. Because we expect the enemy to attack swiftly, these targets should be selected to destroy the enemy as he attacks. Plan targets at fording sites, bridges, narrow defiles restricting movement, road intersections, obstacles, and possible overwatch positions.

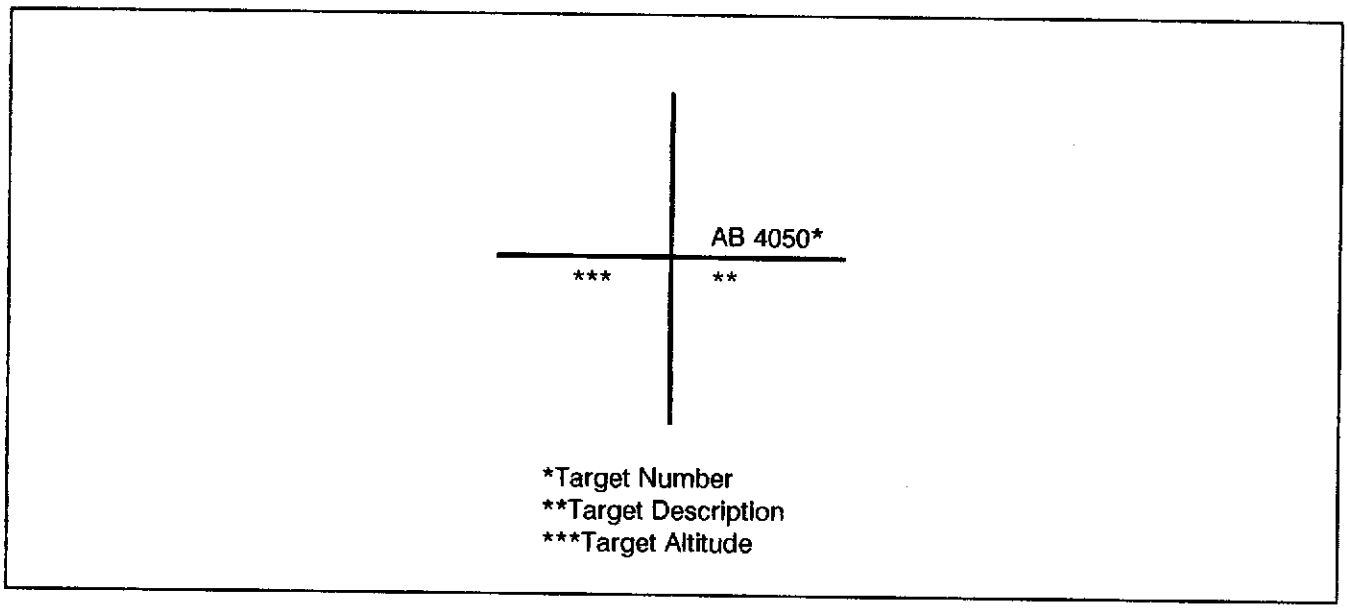


Figure 6-3. Standard Target Graphic Symbol.

A *linear target* is narrow and more than 200 meters long (for example roads and trench lines). A linear target is designated on the target list by two grids (one for each end of the target), or a center point including length and altitude.

- Offensive application. These targets can be used to screen flanks with smoke or high explosives along attack axes. They should be used to attack enemy counterattack formations along high-speed avenues of approach.
- Defensive application. Linear targets can be used to destroy enemy attack echelons as they approach defensive positions. They may also be used with smoke in addition to the FPF to disrupt echelons as they attack.

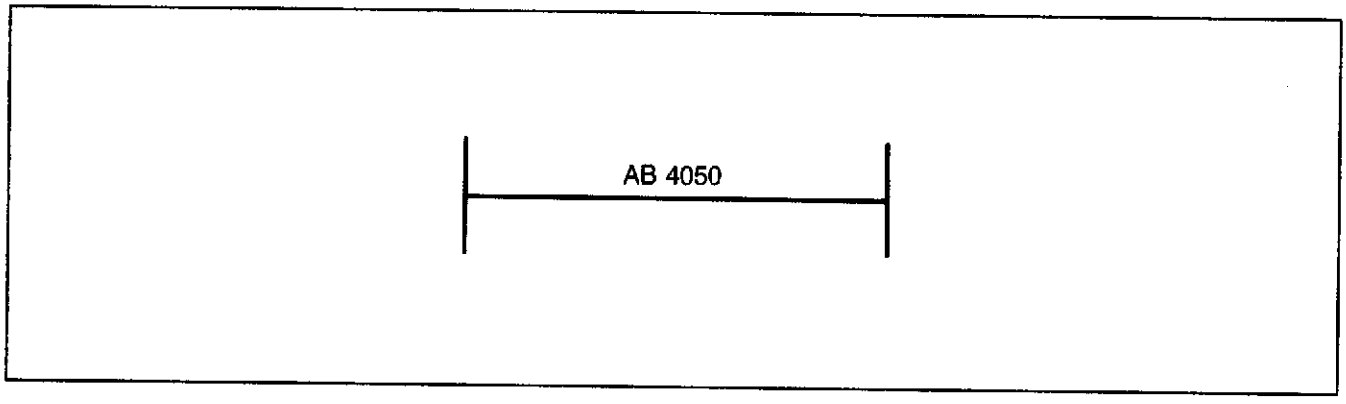


Figure 6-4. Linear Target Graphic Symbol.

A *group of targets* consists of two or more targets on which simultaneous attack is desired by the maneuver commander. For field artillery fires, the direct support battalion is the lowest level that can designate and implement a group of targets. The FSO requests the group. Targets included in a group may be attacked individually.

A group of targets is portrayed graphically by circling the targets and identifying them with a group designation. The group designation consists of the letters assigned to the supported unit with a number inserted between them.

- Offensive application. Group targets are used to engage several targets close together to create a shoulder or an assailable flank, or to isolate enemy positions as the company attacks other positions.
- Defensive application. A group can be used to engage enemy forces stopped at minefields and obstacles, or to engage vehicles at minefields waiting to cross rivers. Individual targets in the group would be selected based on how you envision the enemy forming at these activities.

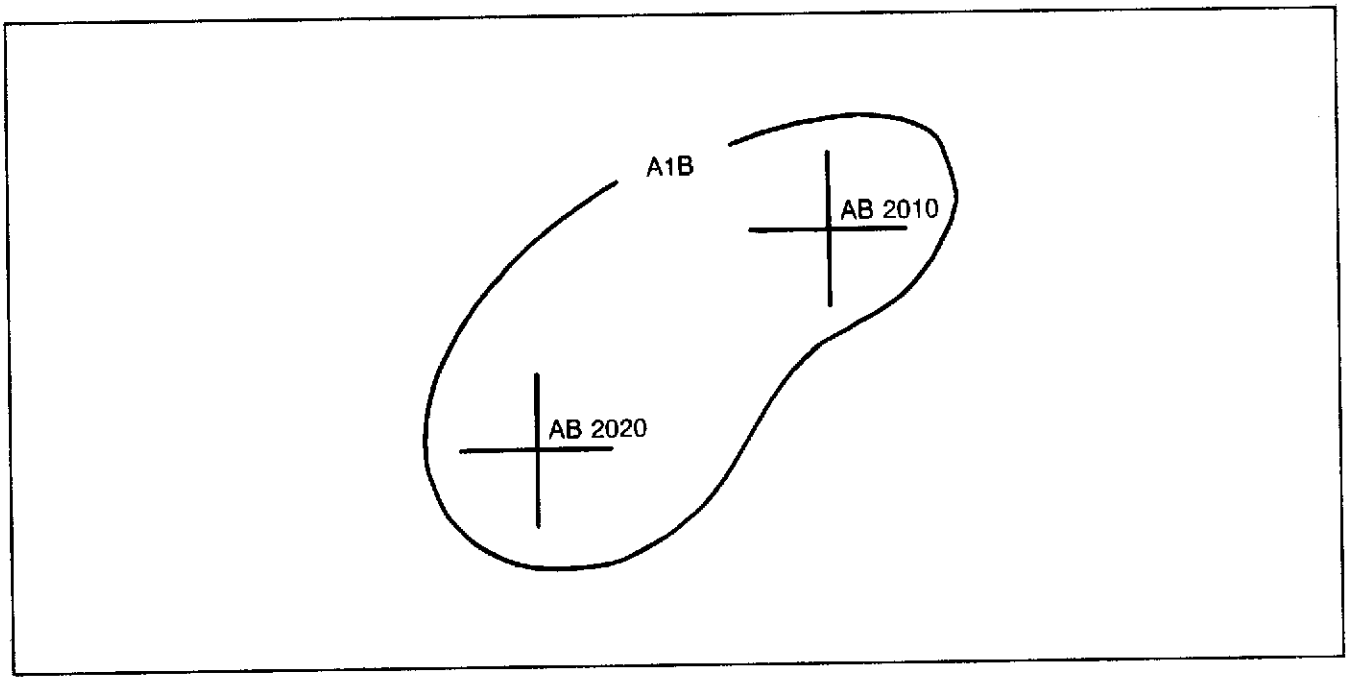


Figure 6-5. Group Target Graphic Symbol.

A *series of targets* is a number of targets or groups of targets planned to be fired in a predetermined time sequence to support the scheme of maneuver. A series may be either on-call or scheduled. Phasing of targets within a series is requested by the initiator or determined by the fire planner based on the nature of the targets and the desires of the supported commander. Phasing of targets may be either on-call or scheduled. The direct-support battalion is the lowest level authorized to designate a series of targets.

A series is shown graphically as individual targets or groups of targets within a circular area. The series is given a code name by the direct support field artillery battalion.

- Offensive application. The series may be planned to support the assault on an objective. A series will allow for fires to shift automatically to engage individual targets or groups of targets as the company fights across an objective.
- Defensive application. The series allows fires to be tied to the speed of the enemy attack. A series of linear targets may be planned to engage enemy attack echelons, such as firing linear targets 1,000 meters apart (3 minutes at 20 kmph).

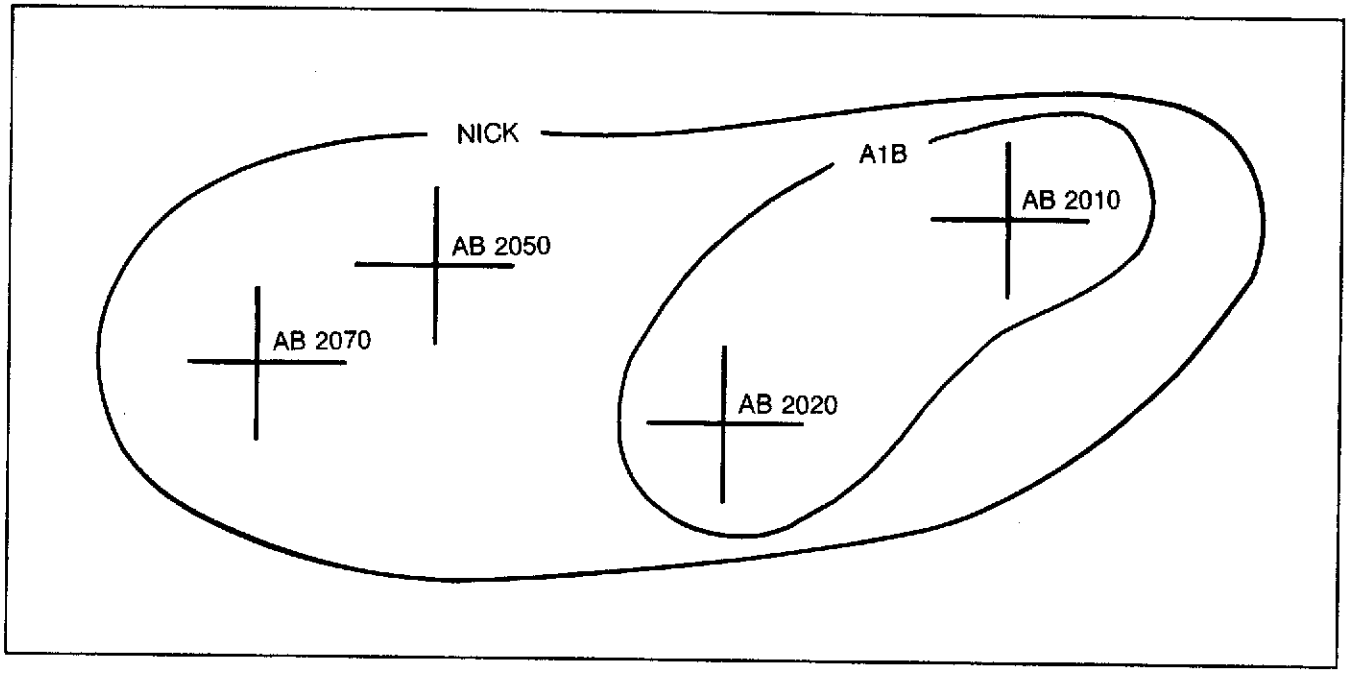


Figure 6-6. Series Target Graphic Symbol.

Preparation

The preparation is planned by the direct support field artillery battalion or a higher echelon. It is an intense volume of fire, delivered in accordance with a time schedule to support an attack. The fires normally begin prior to H-hour and may extend beyond it. They may start at a prescribed time or be held on call until needed. The duration of the preparation depends on many factors including fire support needs of the entire attacking force, number of targets, firing assets, and ammunition available.

A preparation is normally phased to permit successive attacks on certain types of targets. The first phase should provide for the early attack of hostile fire support means and observation systems. The second phase should include enemy CPs, communications facilities, assembly areas, and reserves. The final phase should pose an immediate threat to the defending force. Plans should be made to suppress enemy fire support means and other critical targets throughout the preparation, time and ammunition permitting.

Counterpreparation

The counterpreparation is planned by the direct support field artillery battalion or higher echelons. Counterpreparation fire is intense, prearranged fire delivered just before the start of an enemy attack. (FM 6-20 gives additional details on counterpreparation.)

Final Protective Fires

FPFs are immediately available planned fires that create a barrier to enemy movement, especially dismounted infantry approaching across defensive lines or areas. These areas are integrated with defensive plans. The pattern of FPF plans may be varied to suit the tactical situation. FPFs are drawn to scale on the target overlay. The size of the FPF is determined by the number and type of weapon used to fire the FPF.

WEAPON	SIZE (METERS)
81-mm Mortar (4 tubes)	100 x 35
107-mm Mortar (3 tubes)	150 x 40
107-mm Mortar (6 tubes)	300 x 40
155-mm Howitzer (4 guns)	200 x 50
155-mm Howitzer (6 guns)	300 x 50
155-mm Howitzer (8 guns)	400 x 50
203-mm Howitzer (3 guns)	200 x 50
203-mm Howitzer (4 guns)	400 x 50
203-mm Howitzer (6 guns)	500 x 50
203-mm Howitzer (8 guns)	800 x 50

Figure 6-7. FPF Dimensions.

The commander is responsible for the precise location of FPFs. The company FSO will—

- Report the desired location of the FPF to the supporting FDC.
- Adjust indirect fire on the desired location, by weapon.
- Transmit the call to fire FPF to the supporting FDC.

Authority to call for the FPF is given to the commander (normally the company commander or platoon leader) in whose area the FPF is located. The FPF has the highest priority of any target assigned to a fire support means.

Registration

Registration fires allow indirect-fire units to correct firing data and ensure more effective engagement of subsequent targets. Registrations are conducted by the firing units and their observers after coordination with the FSO and the company commander. They can be fired into offset areas on the flanks for deceptive purposes and may be integrated with other firing to further disguise their nature. Priority targets should be registered whenever possible.

Suppression

Suppressive fires may include both direct and indirect fire. They are planned and delivered to suppress the enemy, or to hamper his operation and limit his ability to perform a mission. Suppression generally lasts only as long as firing continues. "Immediate suppression" is announced in the call for fire, indicating that the observer's unit is receiving effective enemy fire, and his fire request should be processed without delay.

Use of Special Munitions

Obscuration fires use smoke and white phosphorus ammunition to suppress the enemy by obscuring his view of the battlefield. (High explosive ammunition may also obscure his view with dust and fires but should not be relied on as the primary means.) Because smoke is subject to changes in wind direction and terrain contours, its use must be coordinated with other friendly units affected by the operation. Used properly, obscuration fires can—

- Slow enemy vehicles to blackout speeds.
- Obscure the vision of enemy direct-fire weapon crews.
- Reduce accuracy of enemy-observed fires by obscuring observation posts (OP) and CPs.
- Cause confusion and apprehension among enemy soldiers.
- Limit the effectiveness of the enemy's visual command and control signals.

Screening fires are closely related to obscuration fires; they also involve the use of smoke and white phosphorus. However, screening fires mask friendly maneuver elements to disguise the nature of their operations. For example, they are used to screen river crossings or an enveloping force. Screening fires may assist in consolidating an objective by placing smoke in areas beyond the objective, or they may be used to deceive the enemy into believing that a unit is maneuvering when it is not. Generally, screening fires require the same precautions as obscuration fires. Smoke screens must be large enough so random enemy firing into them will not produce excessive casualties. Also avoid establishing a pattern of using smoke with maneuver, such as habitually firing smoke two kilometers in front of troops.

Illumination may be scheduled or on-call, and is used to—

- Allow use of friendly direct-fire weapons and adjustment of indirect fires.
- Illuminate areas of suspected enemy movement.
- Orient moving units.

Rehearsal and Execution

Once the fire support plan has been developed and coordinated, it should be rehearsed. As the company team conducts rehearsals of the maneuver, the fire plan is concurrently rehearsed. The target list is executed as the maneuver is conducted, fires are requested (though not actually executed by the firing batteries) just as they would be during the operation. Under ideal circumstances, FPF could be adjusted during the rehearsal. Rehearsals on the terrain will reveal any problems in visibility, communications, and coordination of the fire support plan. Rehearsals should be conducted under degraded conditions (at night, buttoned up, in MOPP 4) to make sure the plan can be executed in all circumstances.

If time or conditions do not permit full-scale rehearsals, key leaders can meet, preferably at a good vantage point, and brief back the plan. A sand table depiction of the terrain is useful here. Each player explains what he does, where he does it, and the fall-back plan to overcome key-leader casualties. The fire support plan execution is integral to this process and is rehearsed in exactly the same way.

If all else fails, the company team will rely on the SOP for maneuver and fire support execution. This should not be the normal procedure as it allows the greatest possibility of error. The company team SOP should specify the responsibilities of all key leaders and who will perform those responsibilities if the primary person is unavailable (casualty, vehicle breakdown, or communications failure).

As the operation is conducted, the fire plan is executed. Targets are fired as required, and adjustments made because of enemy reactions. Priority targets are cancelled as they are passed by friendly units or no longer relevant to the maneuver. The FSO and his FSV have four options for location on the battlefield:

Option 1: FSO and FSV collocated with the company team commander.

Option 2: FSO collocated with the commander but the FSV (and on-board laser designator) located at a separate vantage point on dominant terrain.

Option 3: FSO and FSV located at a separate location from the commander at a vantage point from which he can best observe the target area to execute priority fire missions.

Option 4: FSO and FSV located outside the company zone with the COLT.

Regardless of his location, the FSO continues to –

- Maintain communications with the task force FSE.
- Update the task force FSE and artillery FDC on friendly unit locations.
- Update the fire support plan, cancelling unnecessary targets.
- If given the responsibility by the maneuver commander, direct the displacement of the mortar platoon when it is attached to the company team.

Communications

The FSO monitors four radio nets:

- *Company command net FM (voice).* Tank platoon leaders, the XO, and attachments use this net to send reports, receive instructions, and request fires. Any COLTs attached to the company will monitor this net. The company headquarters is the NCS.

- *Task force mortar fire direction net FM (voice or digital).* Observers use this net to request fires of the battalion mortar platoon. Other stations on the net include the FIST headquarters and the battalion FSE. Although this is the primary net for the platoon FOs, they enter the battalion fire support net for voice coordination. The battalion mortar platoon is the NCS.
- *Battalion fire support net FM (voice).* This net is used for voice coordination of fire support. Stations in the net include the FIST headquarters, attached COLTs, and the battalion mortars; the battalion fire support station (FSS) is the NCS. FOs enter this net for voice coordination purposes. Company and battalion FSOs operate on this net when separated from their FSSs. This net can be used as a backup field artillery fire direction net (voice) to the field artillery digital fire direction net. During the execution of the fire plan, maneuver commanders can use this net to make an immediate change in the priority of fires. This is the net the company team commander uses in emergencies to get fires. Keep this frequency handy.
- *FA fire direction net FM (digital).* This net is used for field artillery fire direction. The FIST headquarters may digitally forward calls for fire from its observers on this net. The direct support battalion FDC is the NCS. When a COLT is present, it will use this net to request field artillery fires. Also the battery FDC and battalion FSS are on the net.

Fire Support Coordinating Measures

Measures that facilitate the attack of targets are permissive measures. All permissive measures will be drawn and lettered in black. If the company team crosses an active permissive fire line, it is vulnerable to attack from friendly air and artillery. Report approaching and crossing these lines on both artillery and task force command nets so the measures can be adjusted or cancelled. Specific permissive measures are:

- Coordinated fire line (CFL)—line beyond which all surface-to-surface fire support assets may fire without additional coordination. A CFL may be established by a maneuver battalion operating independently, but normally is established by brigade or higher headquarters.

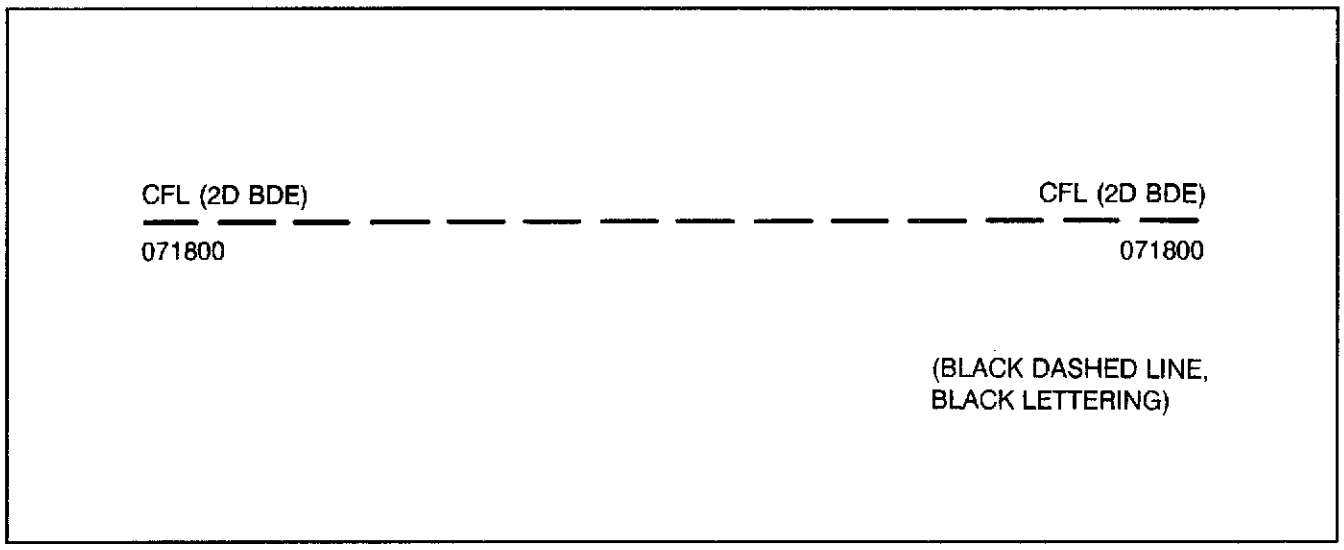


Figure 6-8. CFL Graphic Symbol.

- Fire support coordination line (FSCL)—line beyond which all targets may be attacked by any weapon system without additional coordination, as long as the effects of those fires do not affect personnel short of the line. Normally established on identifiable terrain by corps or independent divisions.

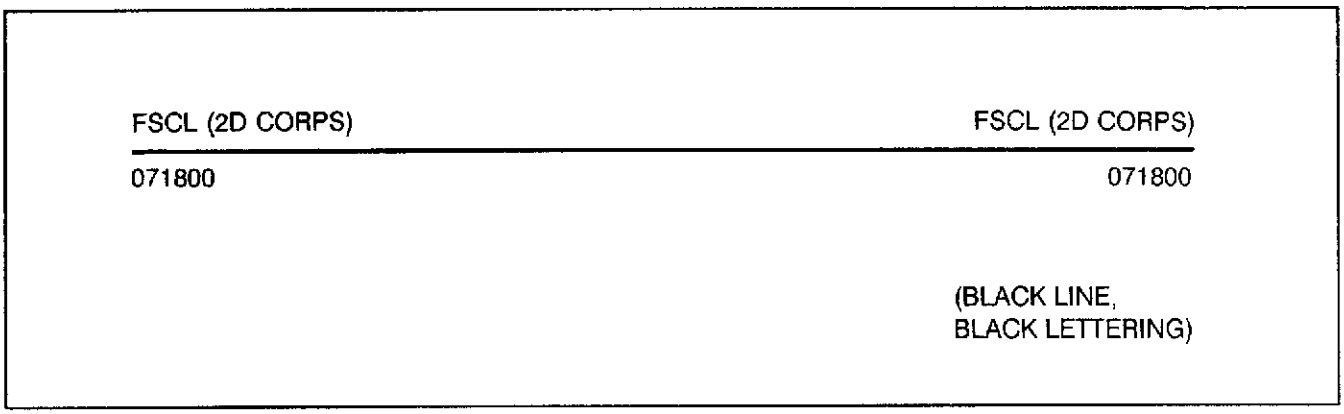


Figure 6-9. FSCL Graphic Symbol.

- Free-fire area (FFA)—area in which any weapon system can fire without additional coordination. It is normally established on identifiable terrain by division or higher headquarters.

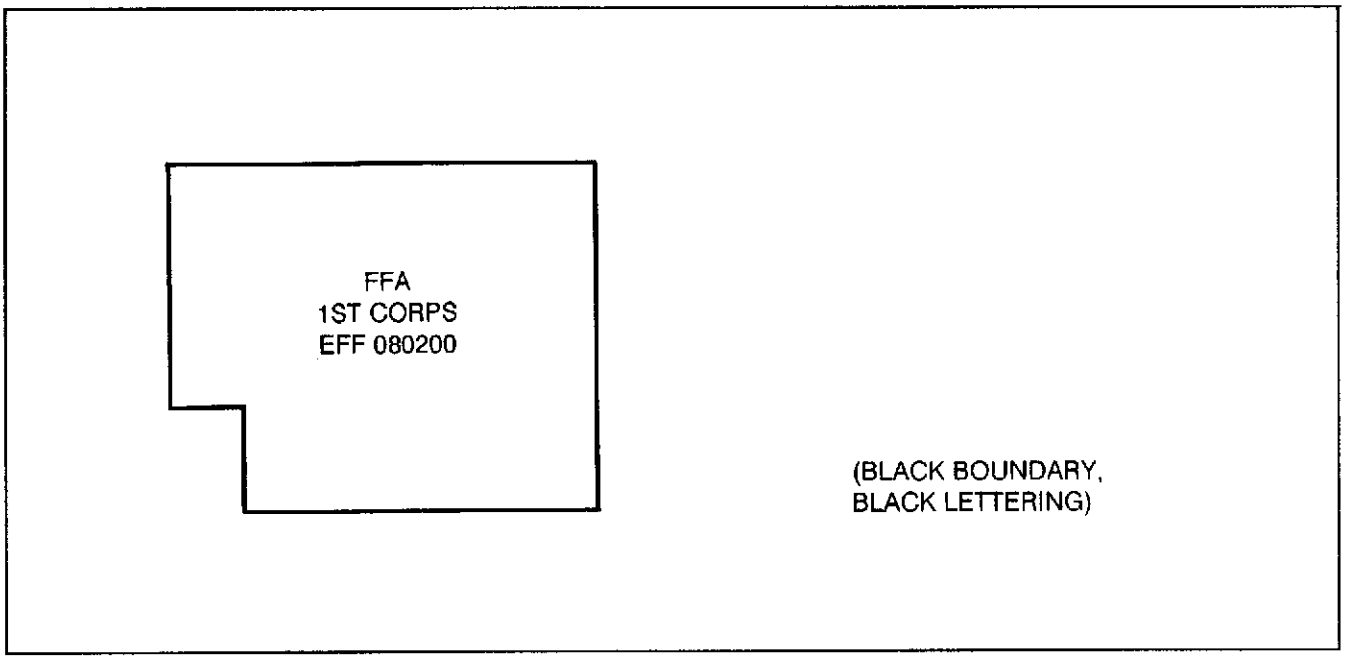


Figure 6-10. FFA Graphic Symbol.

Those measures which provide safeguards for friendly forces are restrictive measures. All restrictive measures will be drawn and lettered or numbered in black. Specific restrictive measures are:

- Restrictive fire area (RFA)—an area with specific restrictions. Fires that exceed those restrictions will not be delivered without coordinating with the establishing headquarters. An RFA is normally established by battalion or higher headquarters.

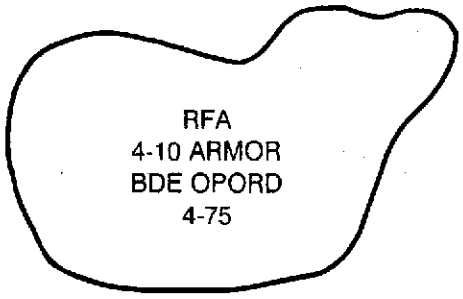


Figure 6-11. RFA Graphic Symbol.

- Restrictive fire line (RFL)—a line between two converging friendly forces. No fires or effects of fires (direct or indirect) can be executed across an RFL without coordinating with the affected force. An RFL is normally established on identifiable terrain by the commander common to the converging forces.

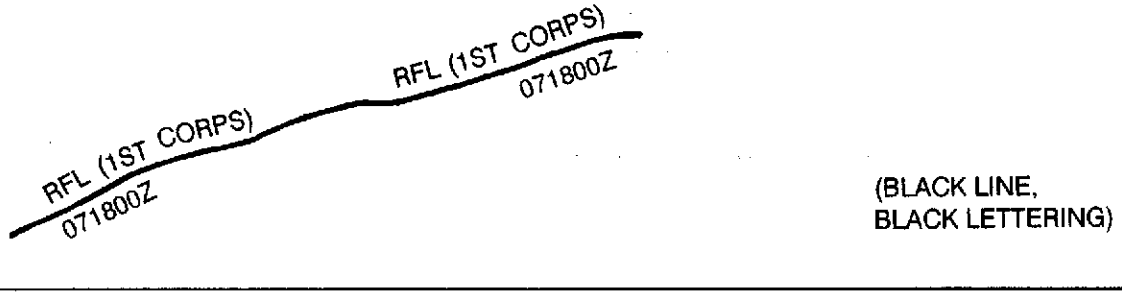


Figure 6-12. RFL Graphic Symbol.

- No-fire area (NFA)—an area in which no fires or their effects may be delivered except on a mission-by-mission basis after coordinating with the establishing headquarters. Fires are allowed if friendly forces are attacked by the enemy and if, in the opinion of the senior soldier on site, there is no time to coordinate with the establishing headquarters. An NFA is normally established by division or higher headquarters.

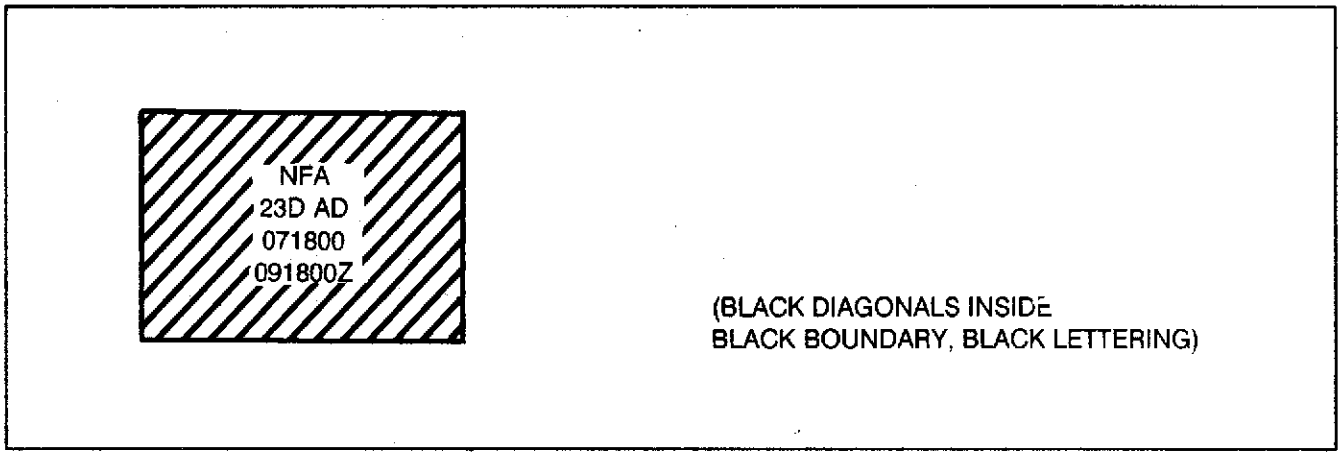


Figure 6-13. NFA Graphic Symbol.

- Formal airspace coordination area (ACA)—a block of airspace allowing relatively safe travel of aircraft to facilitate the simultaneous attack of targets by both aircraft and indirect fire assets. ACAs are established by brigade or higher headquarters.

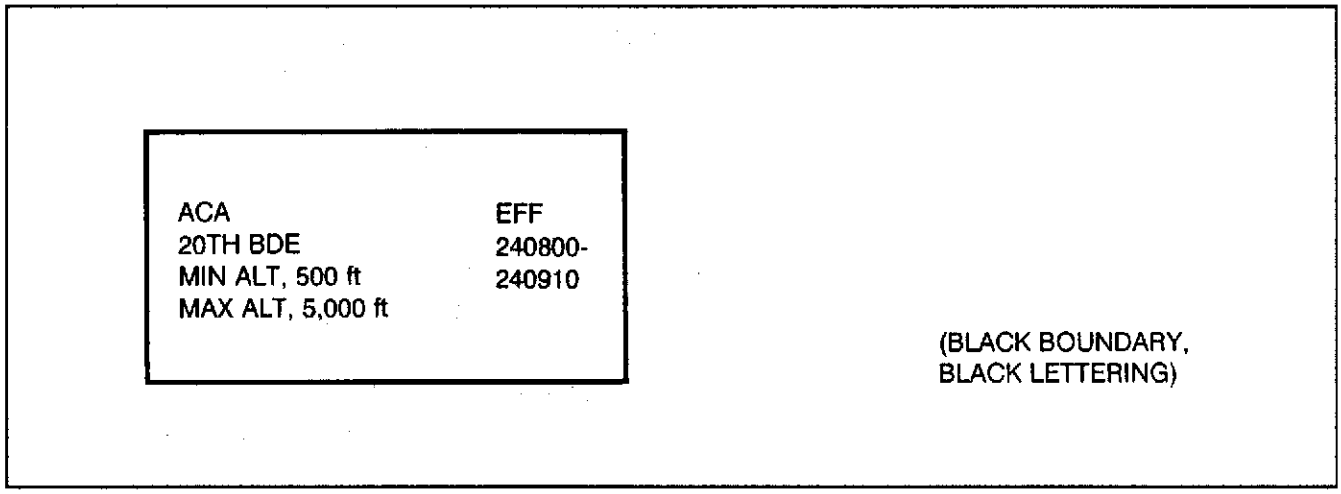


Figure 6-14. Formal ACA Graphic Symbol.

- Informal ACA—normally used for immediate air strikes when time is not available for the formal measure. It can be a time-distance separation or a terrain feature separation of the attacking air and surface fires. (See Figure 6-15; air fires are allowed only to the north of the road from 0905 hours to 0910 hours.) The informal ACA can be established at task force or higher level.

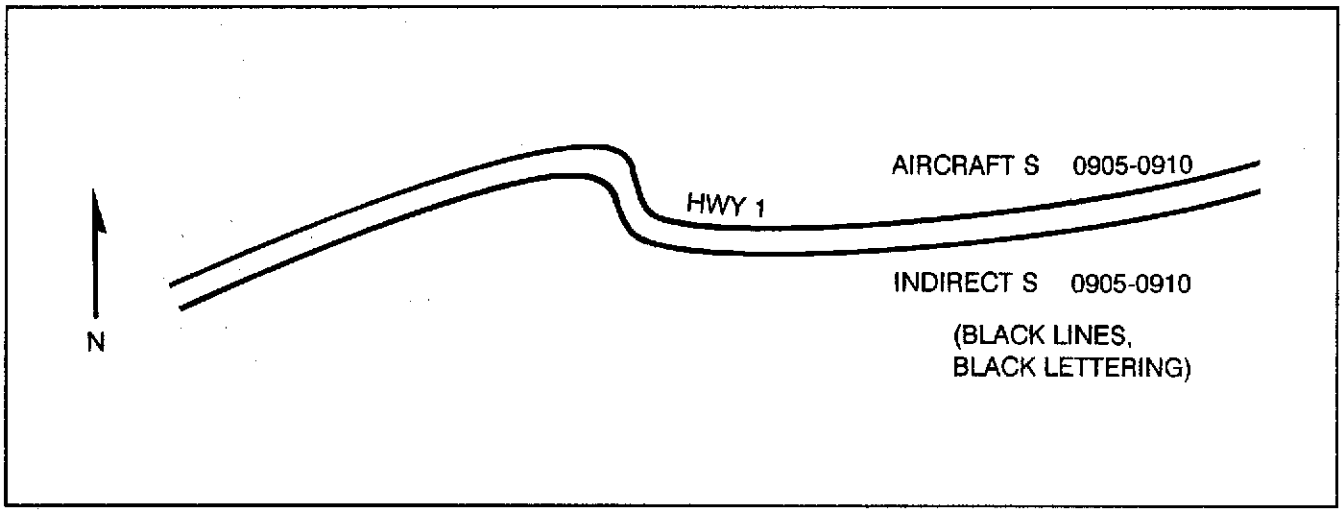


Figure 6-15. Informal ACA Graphic Symbol.

TACTICAL AIR SUPPORT

At company level, you will only be concerned with tactical air support in the CAS role. CAS missions are air strikes against hostile targets close to friendly forces. CAS missions must be carefully controlled to achieve the most benefit with the least risk to friendly forces. Most often CAS missions support attacks in preparation of an enemy-held objective for assault. In the defense, CAS will engage targets in the EAs and may be diverted to assist as the enemy closes in strength on defensive positions.

CAS missions are either preplanned (at task force) or immediate. Preplanned missions are normally controlled by the Air Force forward air controller (FAC). Using specialized radios available to him, the ground FAC positions himself with his vehicle or a backpack radio where he can see the target. The ground FAC may be in your area to do this. If the FAC is unavailable or cannot reach the area in time, the FSO or FO can control the CAS mission. At company level, CAS concerns are simple:

- Mark friendly positions or vehicles to preclude accidental attack. This marking may be done with air recognition panels, colored smoke, other pyrotechnics, or similar devices recognizable from the air.
- Designate enemy positions or targets to assist the aircrew in acquisition and identification. This can be done with tracer fire, white phosphorus, smoke rounds, or illumination rounds at night. Air panels and smoke or lights can also be used to point toward the enemy from friendly positions.
- Use suppression of enemy air defenses (SEAD) as a priority mission during friendly air strikes. Enemy air defense missile and gun systems are vulnerable to ground fire and suppression. SEAD can dramatically improve the survivability of aircraft and helicopters. This allows them to be more accurate with their weapons and remain on station longer.
- Protect and assist the ground FAC if necessary. The extent and priority of this task depends on the guidance in the task force order. For example, when the company team is the lead element, the FAC may move with it in an offensive maneuver. The company team would provide security, maintenance, and resupply to the soldiers and equipment of the FAC while they remain with it.

NAVAL GUNFIRE SUPPORT

When operating close to a coastline with NGF ships within range, NGF can be highly effective. Ships can be repositioned to provide support as the battle changes. NGF weapons include 16-inch, 8-inch, 6-inch, and 5-inch guns. (Additional information on NGF is available in Appendix E, FM 6-20.)

Section II. ANTIARMOR

A platoon of the antiarmor company will often be attached to the company team, especially in mechanized task forces.

When properly employed and manned by a well-trained crew, the TOW missile is an effective weapon system. It can provide sustained, accurate fires out to 3,750 meters, well beyond effective engagement range of Threat tank weapons. The antiarmor platoon is a dedicated antiarmor system with no additional missions. It does not haul infantry, conduct reconnaissance, engage aircraft, or assault objectives; it kills tanks and other armored vehicles from stationary firing positions.

If the antiarmor platoon is equipped with the M901 ITV, serious limitations of the system must be considered in the tactical scheme of maneuver. It is larger, heavier, and slower than the M113, and much slower than the M2. The missile has a significant launch signature and missile flight time is relatively long (approximately 18 seconds to reach maximum range). Add this to the time necessary to reload or to retract the launcher head, and the time between engagements can be lengthy. This is not a system that can "shoot and scoot." The TOW II missile should not be fired over bodies of water or electrical lines that could short out the wire guidance links. These factors make prior planning even more critical for ITV employment than for other, more flexible weapon systems.

FUNDAMENTALS OF ANTIARMOR EMPLOYMENT

The survivability and effectiveness of the antiarmor platoon can be increased by correctly applying the fundamentals of antiarmor employment:

- Provide mutual support.
- Provide security.
- Strive for flank shots.
- Use standoff range.
- Use cover and concealment.
- Employ in depth.

Mutual Support

Mutual support is the support that units render to each other because of their assigned tasks, relative positions (to each other and the enemy), and inherent capabilities. Establish mutual support by—

- Employing TOW missiles by section.
- Assigning overlapping sections of fire between sections.

Employing TOW missiles by section establishes mutual support between two antiarmor squads. If one squad is attacked or forced to displace, the other squad can continue to cover the assigned sector (see Figure 6-16). To achieve this, antiarmor squads position themselves so enemy fires directed at one squad do not suppress the other. Another aspect of mutual support—protection against ground attack—is accomplished by positioning TOW missile sections near or within supporting distance of accompanying or supported infantry.

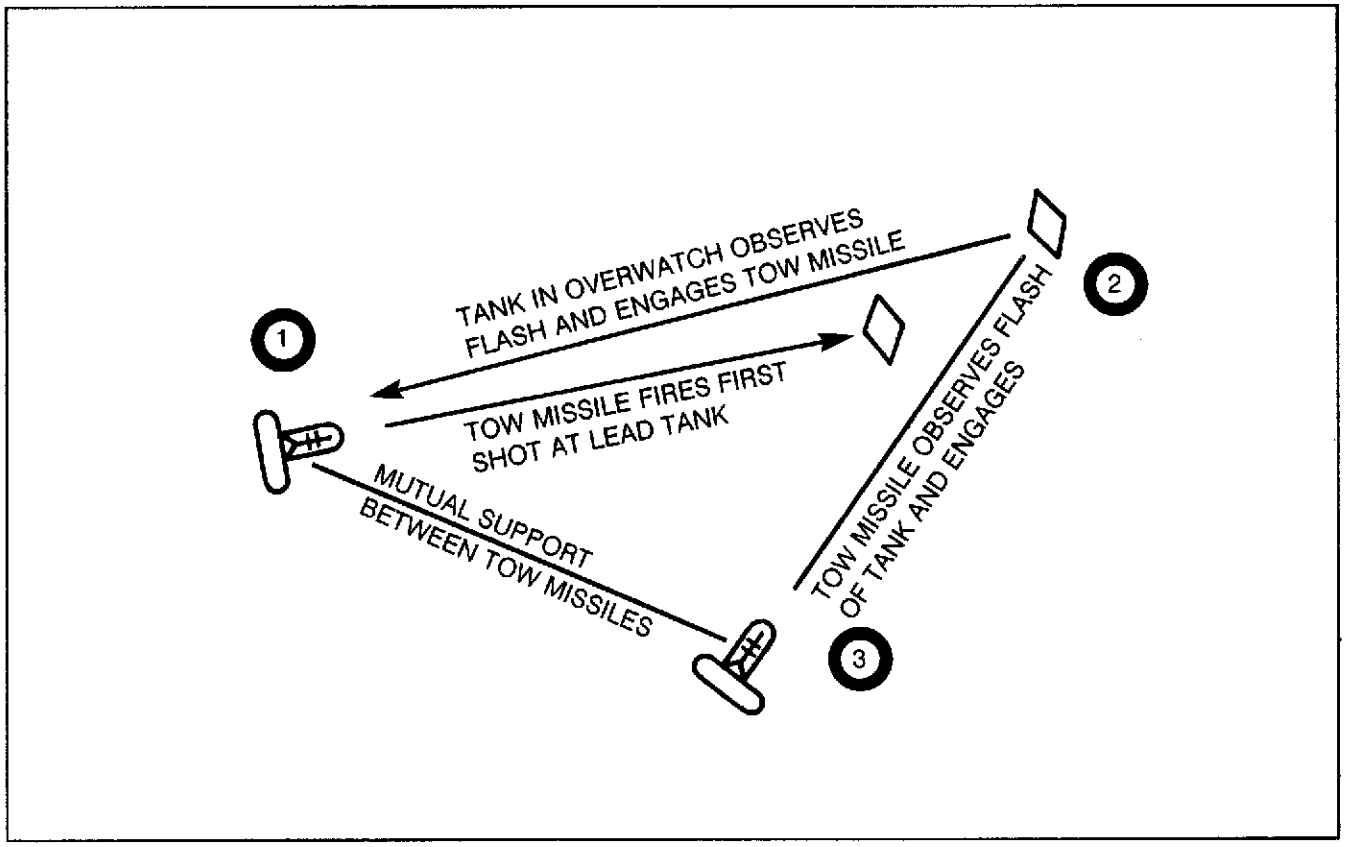

TANK IN OVERWATCH OBSERVES FLASH AND ENGAGES TOW MISSILE
TOW MISSILE FIRES FIRST SHOT AT LEAD TANK
MUTUAL SUPPORT BETWEEN TOW MISSILES
TOW MISSILE OBSERVES FLASH OF TANK AND ENGAGES
1
2
3

Figure 6-16. Employment by Section.

Overlap sectors of fire (see Figure 6-17) to achieve mutual support. This may be accomplished by using primary and secondary sectors of fire. Secondary sectors of fire are used to achieve mutual support when—

- Units are wdely dispersed.
- Fields of fire are restricted by terrain.
- There is more than one armor avenue of approach.

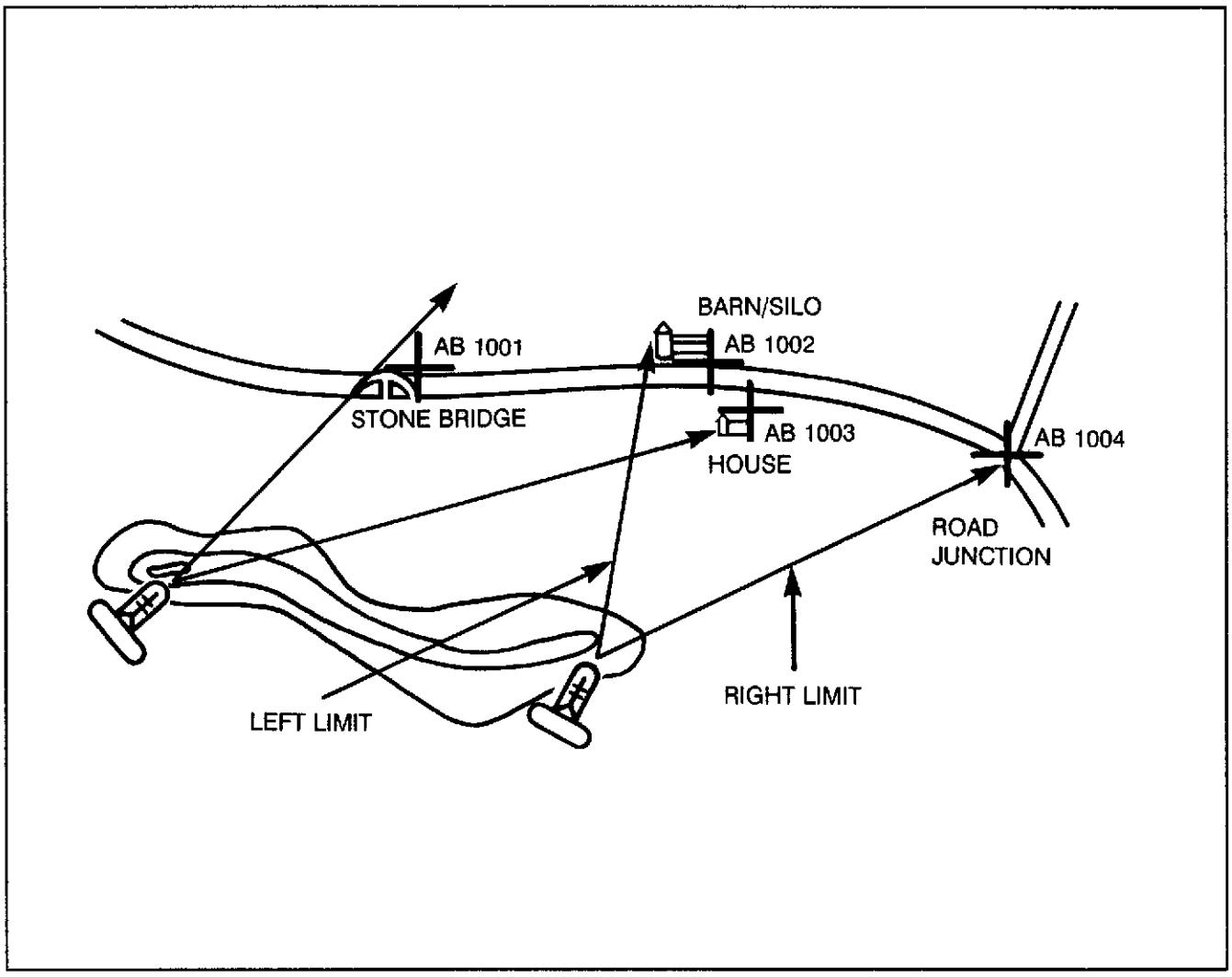


Figure 6-17. Overlapping Sectors of Fire.

Security

Antiarmor platoons are vulnerable to attack by dismounted infantry because they have limited assets for self-defense. Protection of antiarmor units can be achieved by positioning them near friendly infantry units. Antiarmor squads do not need to be in the same place as infantry, but the infantry should be able to cover dismounted avenues of approach leading to the antiarmor positions. When moving with infantry, antiarmor units provide their own local security. Most importantly, they move behind leading tanks and infantry.

Flank Shots

Ideally, TOW missile squads and sections are positioned to engage tanks from the flank. Frontal shots are less desirable because –

- A tank's armor protection is greatest in the front.
- A tank's firepower and crew are normally oriented to the front.
- Frontal engagement increases the chance of detection and suppression of the antiarmor weapon.
- A tank is a smaller target from the front than from the flank.

TOW Missile Standoff

At ranges beyond 2,000 meters, TOW missiles are more accurate than the tank main gun. The accuracy of a tank's main gun decreases with increased range while that of a TOW missile does not. Position TOW missiles to exploit their range and decrease their vulnerability to detection and return fire.

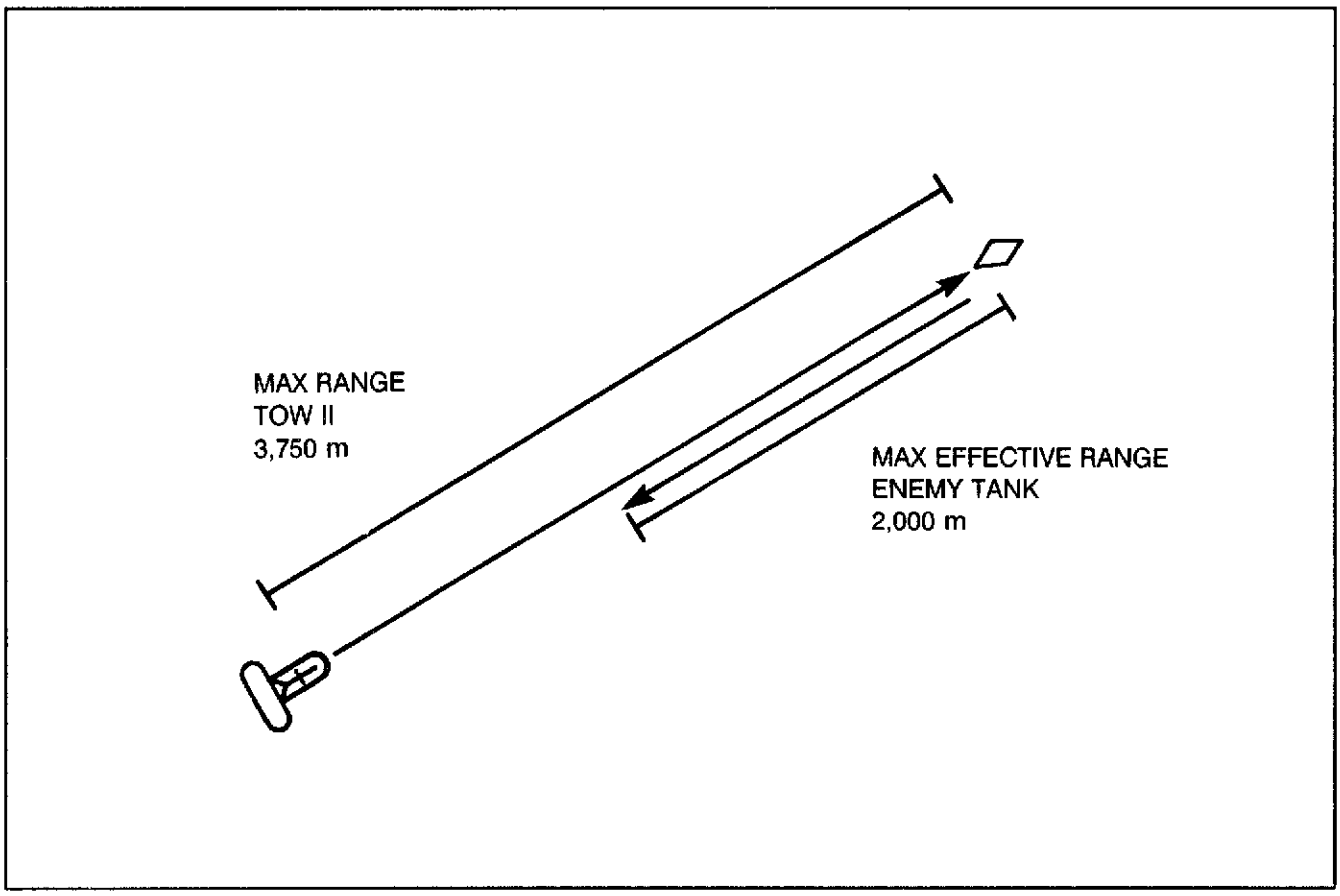


Figure 6-18. Standoff Range.

Cover and Concealment

Proper use of cover and concealment is critical to the survivability of the TOW missile weapon system. The TOW missile has several inherent weaknesses (such as long flight time, slow rate of fire, distinctive signature, gunner exposed during tracking [except ITV]); the effects of these weaknesses can be reduced through the use of cover and concealment. Avoid conspicuous terrain features such as lone buildings or trees and hilltops. Smoke can also be used to provide concealment. To further reduce vulnerability to enemy fire, disperse antiarmor sections laterally and in depth so no two units can be suppressed at the same time by a single enemy weapon. If possible, antiarmor squads should be separated by at least 300 meters.

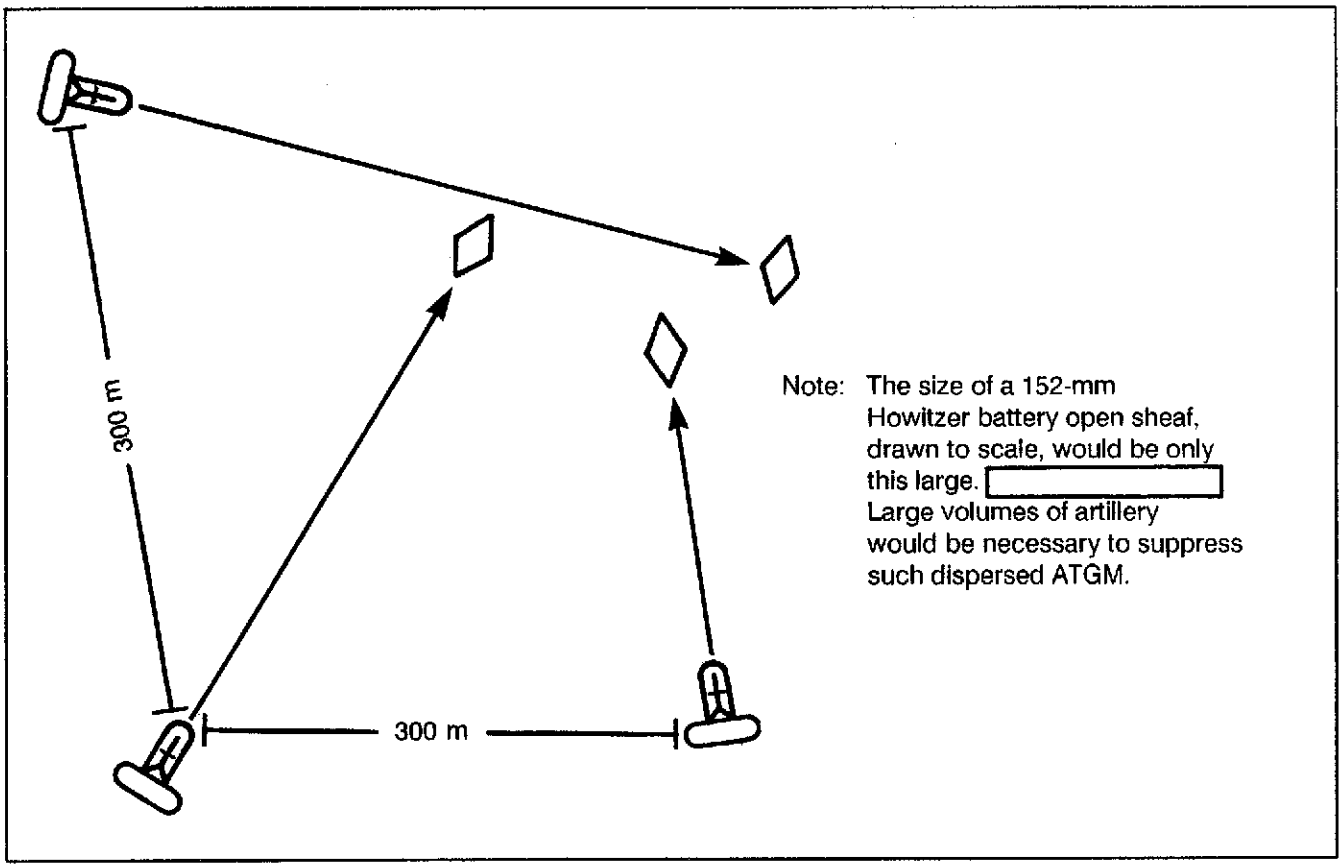

300 m
300 m
Note: The size of a 152-mm Howitzer battery open sheaf, drawn to scale, would be only this large. [ ] Large volumes of artillery would be necessary to suppress such dispersed ATGM.

Figure 6-19. Dispersion Reduces Vulnerability.

Plan In Depth

Antiarmor fire must be planned in depth. In the offense, select routes and firing positions to support the forward movement of assaulting units. In the defense, antiarmor squads may either be forward initially and moved to in-depth positions as the enemy closes, or initially positioned in-depth. If positioned

forward, the ITVs should move after the initial salvo or they will be overrun before they can successfully reposition. The ITV is too slow to run from the enemy.

TACTICAL EMPLOYMENT

In offensive situations, ITV antiarmor platoons are rarely attached to tank-heavy company teams; the difference in vehicle capabilities makes it impractical. The ITV is slower than the M60 and much slower than the M1 and much more vulnerable when on the move or otherwise exposed. The ITV cannot provide effective overwatch of tanks due to the missile's slow flight time.

In the defense, the ITV is very capable. The long standoff range allows ITVs to engage command and control vehicles and air defense systems before, or as, enemy formations enter EAs. This disrupts the enemy's command and control, disorganizes his assault, and leaves him more vulnerable to tactical air and Army aviation attack. The slow, sustained rate of fire makes long-range engagements essential for the ITV's success on the battlefield.

The ITV is also very useful in guarding flank avenues of approach and destroying enemy reconnaissance vehicles at long range, prior to their closure on and reporting of friendly positions and obstacles. Their excellent night sights make ITVs useful additions to the night counterreconnaissance screen, especially when tanks are unavailable. The ITVs should displace prior to first light to maintain their survivability and prepare for their main defensive mission.

COMBAT SUPPORT AND COMBAT SERVICE SUPPORT

Antiarmor platoons have little CS and CSS capability because their parent company has little. Depending on the command relationship, the company team has varying degrees of responsibility toward an antiarmor platoon. Always provide emergency medical aid to antiarmor platoons in the area. Antiarmor platoons have no FOs; the company team FSO will assist the antiarmor platoon leader in planning and coordinating fires. When the antiarmor platoon is attached, support it just like one of your own with food, fuel, ammunition, maintenance and recovery, and engineer effort. Some considerations for these types of support are:

- ITVs use and carry more TOW missiles than M2 Bradleys.
- The ITV is not a robust vehicle. It is also a different vehicular system than the M2, making maintenance even more difficult.
- ITVs are highly vulnerable and must seek cover and concealment in firing positions. Engineers can assist in constructing or improving such positions.

Section III. ENGINEER SUPPORT

Combat engineers have the skills and equipment necessary to enhance friendly mobility and survivability, counter the mobility of opposing forces, and sustain the force. Engineers provide technical expertise and special equipment; the company team normally provides necessary additional manpower. Combat engineers provide four categories of support:

- *Mobility* support seeks to improve movement of the forces and critical supplies by reducing or eliminating the effects of obstacles. (See Chapter 3 for methods to reduce obstacles.)

- *Countermobility* support involves obstacle construction; reinforcement of terrain to delay, canalize, disrupt, and kill the enemy; and increase time for target acquisition and maximum effectiveness of direct- and indirect-fire weapon systems. (See Appendix C for information on obstacle construction.)
- *Survivability* support refers to the construction of protective positions including earth berms, dug-in positions, and overhead protection to reduce the effectiveness of enemy weapons.
- *Sustainment engineering* pertains to missions that do not directly contribute to the mobility, countermobility, and survivability of committed maneuver units but are essential for the unit's firepower and logistical support.

Engineer units provide support to the company team using a command or support relationship as assigned by the task force commander. These are described in FM 5-100.

EQUIPMENT USEFUL IN ENGINEERING EFFORT

In addition to specialized engineer equipment available from engineer units, other equipment that is useful in obstacle emplacement and removal is available at the company team. This equipment is described below.

M88 Recovery Vehicle

While the M88 is not an engineer vehicle, its boom, winch, blade, and towing capability can be very useful in augmenting specialized engineer vehicles. The blade can push loose soil or rubble, and back blade berms spread out spoil from excavations. The blade cannot dig and is not designed to do the work of a dozer tank, CEV, armored combat earthmover (ACE), or D7 bulldozer. The winch, boom, and towing capability can be used in construction or removal of log obstacles, abatis, and tetrahedrons.

M60A3 Blade Tank

In M60-equipped units, each company is authorized a blade kit for installation on one of the company's tanks. This blade has the same capabilities as the blade on the M728 CEV.

M1 Mine Plow and Rollers

These items are being fielded in M1-equipped units. They are very useful in breaching minefields but have some disadvantages. The mine plow seriously decreases mobility and agility of the host vehicle, takes time and equipment to install, and complicates recovery if the vehicle becomes inoperative or mired; the rollers have similar disadvantages.

Vehicular Pioneer Tools

Shovels, axes, mattocks, tanker's bars, and other vehicular equipment can be valuable in enhancing the engineer effort.

SURVIVABILITY

Vehicle Fighting Positions

If the time and engineer assets are available, the company should begin preparing vehicle fighting positions as soon as possible. The M9 ACE and the bulldozer from the engineers can be used to dig fighting positions. The company team must tell the engineers where the positions are to be dug, what orientation is needed for the position, and how the position will look once it is completed. This will normally be done by the vehicle commander, after the commander and the platoon leader approve the location. Specify the

amount of time a platoon can use the engineer equipment; efficient use of scarce earth-moving equipment is critical to the mission. Task a subordinate to act as "Commander in Chief (CINC) bulldozer." He stays with the dozers to make sure they continue to work, are fueled, and mark and prepare positions for execution. Once the engineers begin digging the position, they must be supervised by a member of the company team, usually the vehicle commander.

Digging should start from the enemy side of the position so most of the spoil can be moved to the rear of the position. The spoil should not be formed into a berm or placed in front or to the side of the position. A simple berm is difficult to camouflage and does not provide protection to a vehicle fighting position. The spoil should be either camouflaged or hauled out of the area.

Excellent vehicle fighting positions allow a vehicle to occupy full hide, turret defilade, and hull defilade positions (see Figure 6-20). The best fighting positions also permit unobserved occupation or departure. Such positions occasionally occur naturally (see Figure 6-21), but usually must be developed with engineer assistance (see Figure 6-22). The most time-consuming positions to build are those that cannot use existing terrain. Such positions may be required by the tactical situation and must be very carefully sited to prevent wasted engineer effort (see Figure 6-23).

Fighting positions should be dug as wide as the vehicle with two to three feet on each side. Figure 6-24 gives the dimensions for M1 and M2 positions. (FM 5-103 provides additional information on survivability positions.)

It takes approximately two to three hours to prepare a deliberate fighting position. Optimum use of the terrain will decrease position construction times and allow maximum use of available engineer effort. A hasty fighting position (hull defilade only) takes approximately 30 minutes to construct with an M9 ACE or D7 bulldozer (see Figure 6-25).

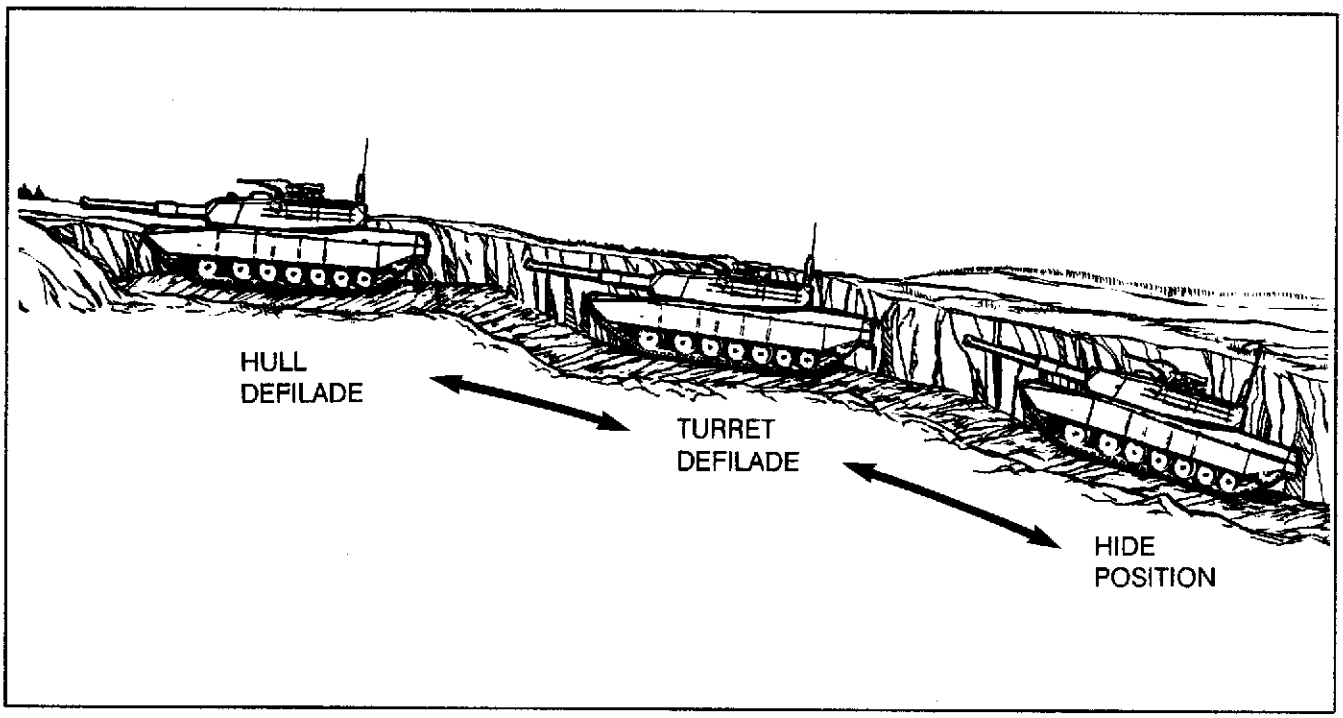


Figure 6-20. Construction of Fighting Positions.

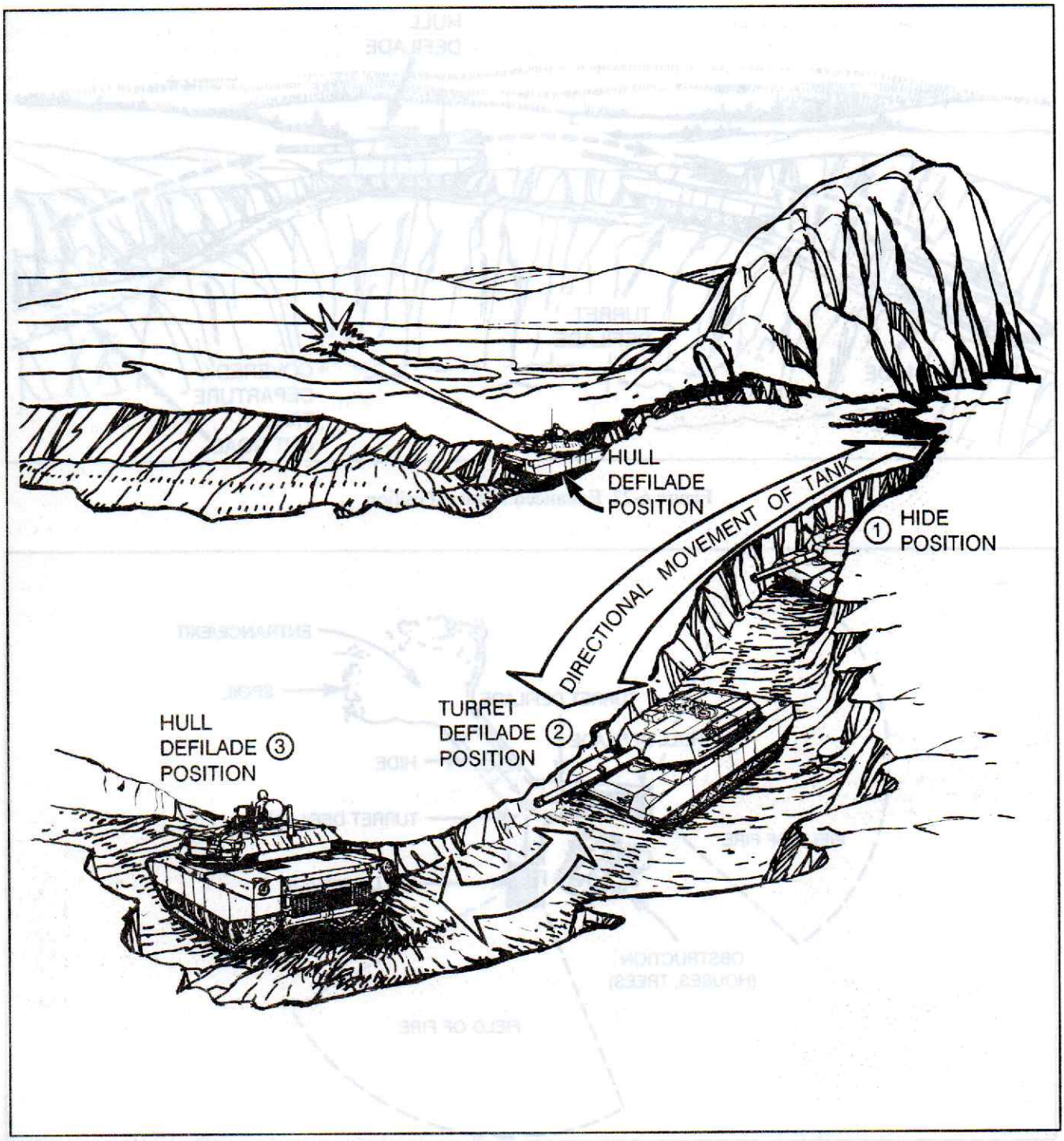


Figure 6-21. Natural Fighting Position.

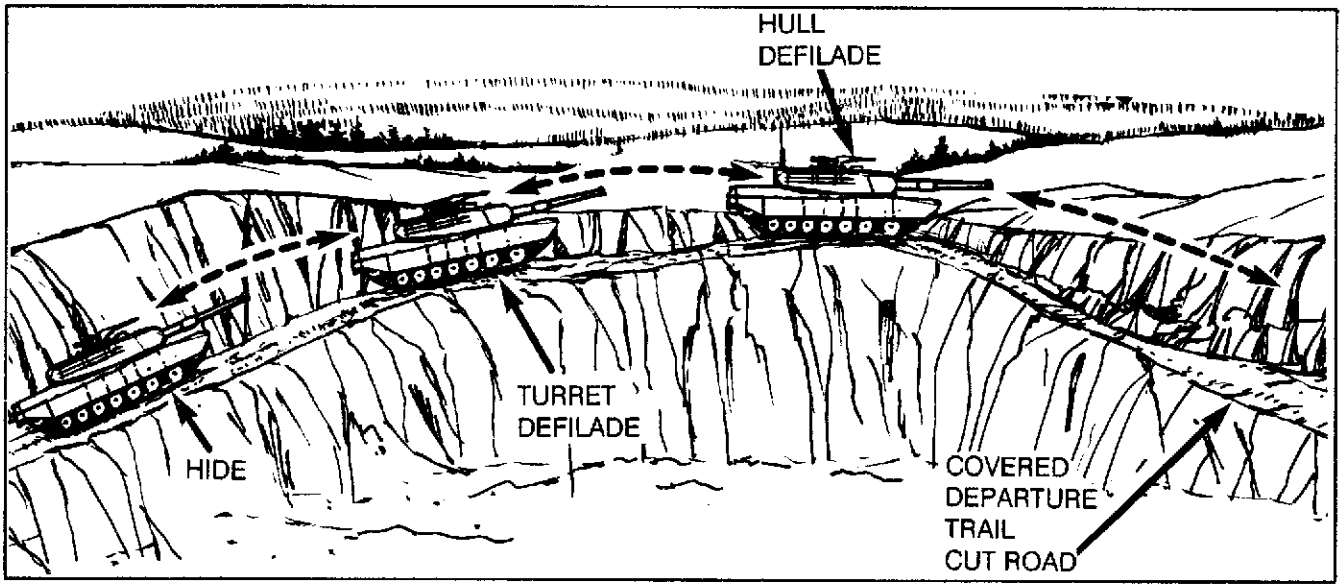


Figure 6-22. Enhanced Natural Position.

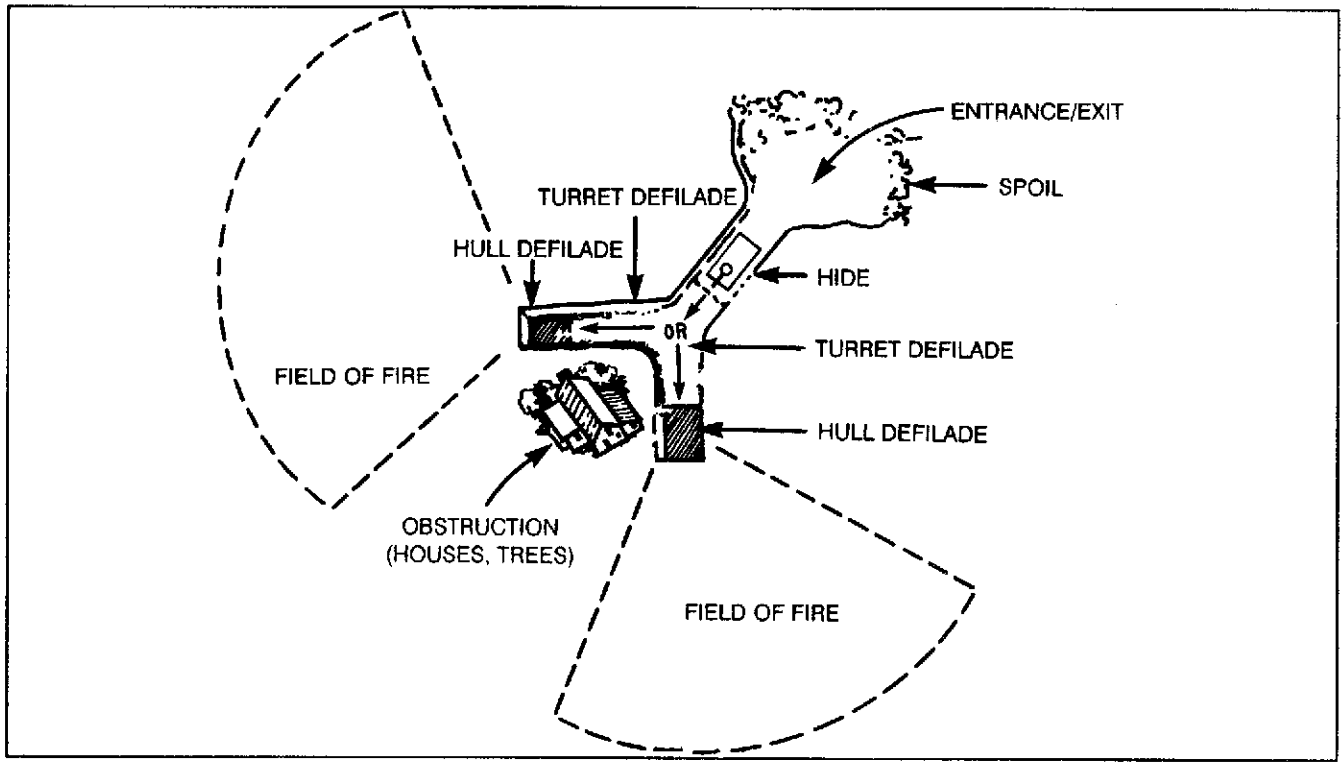
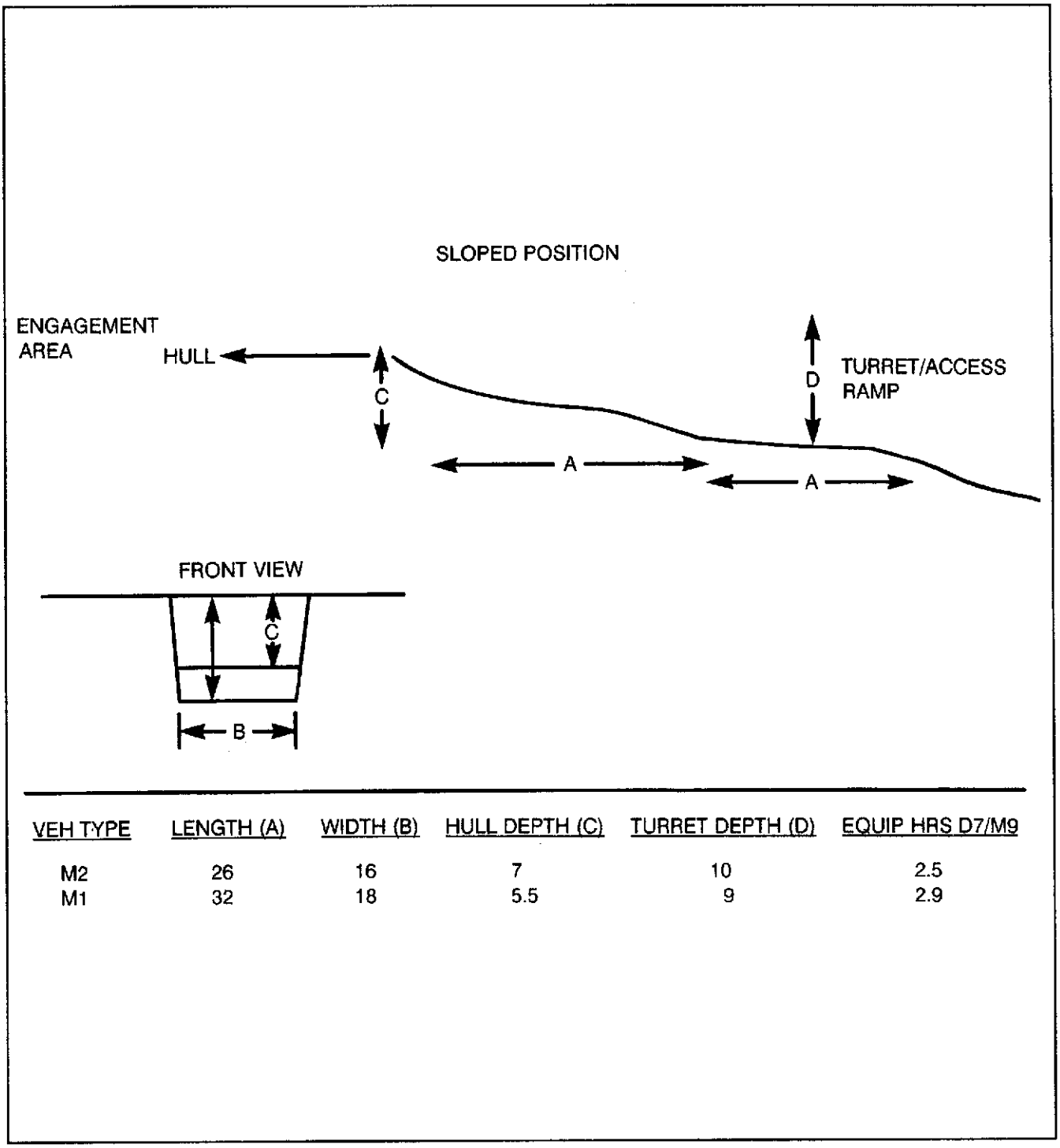


Figure 6-23. Top View of Y-Shaped Fighting Position.



VEH TYPE	LENGTH (A)	WIDTH (B)	HULL DEPTH (C)	TURRET DEPTH (D)	EQUIP HRS D7/M9
M2	26	16	7	10	2.5
M1	32	18	5.5	9	2.9

Figure 6-24. Sloped Position.

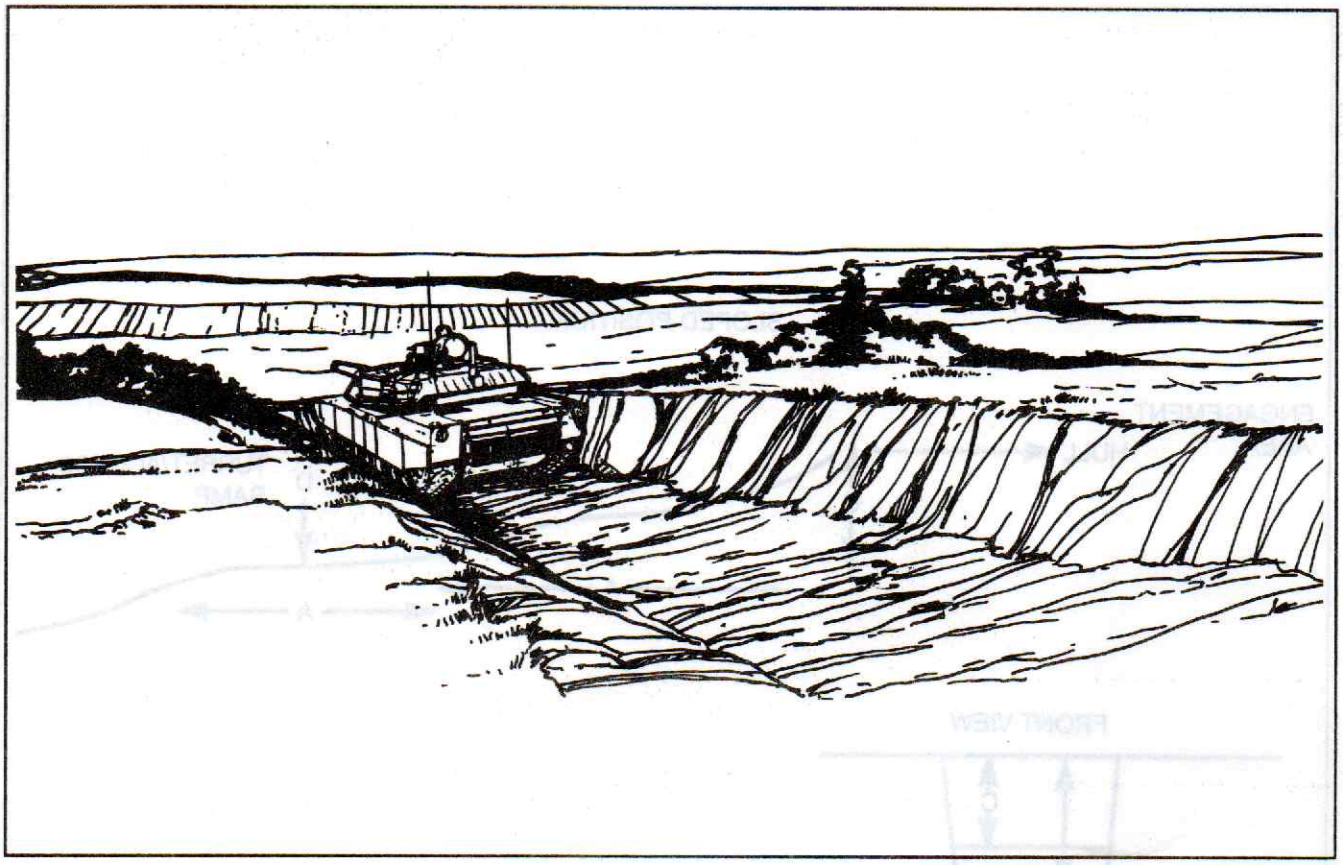


Figure 6-25. Prepared Hasty Fighting Position (Hull Defilade Only).

Infantry Fighting Positions

When the rifle team defends, it prepares fighting positions. Fighting positions must provide cover and concealment and mutual support between fighting positions.

When time is short, a hasty fighting position is better than none. Hasty positions use whatever cover is available. They should give frontal protection from direct fire, yet allow firing to the front and flanks. For protection from indirect fire, a hasty fighting position should be as deep as possible, at least half a meter (18 inches) deep.

Fully prepared fighting positions should be dug armpit deep to protect the occupants and still let them fire the weapons. A one-man fighting position allows greater flexibility in the use of cover because the hole is smaller (see Figure 6-26).

A two-man fighting position provides better security than a one-man position. A modified two-man position may be prepared in close terrain, where grazing fire and mutual support extend no farther than adjacent positions (see Figure 6-27).

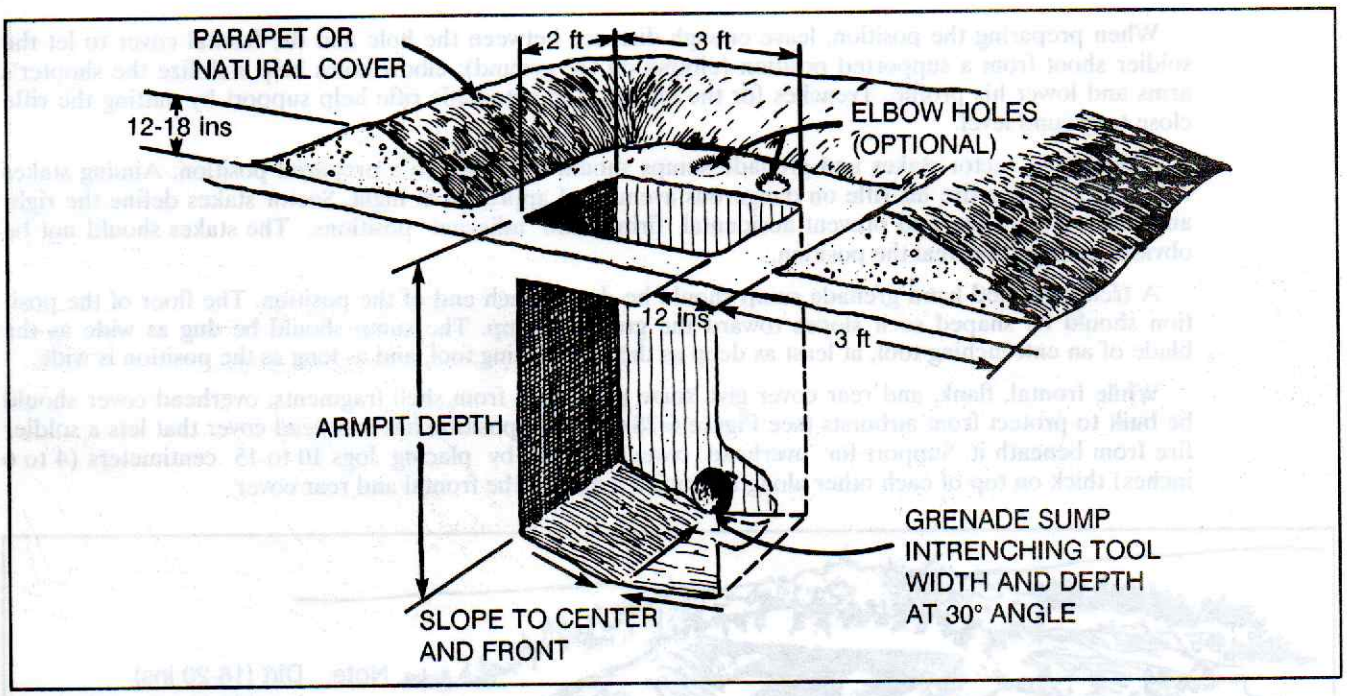


Figure 6-26. Infantry Fighting Position – One-Man Position (Deliberate).

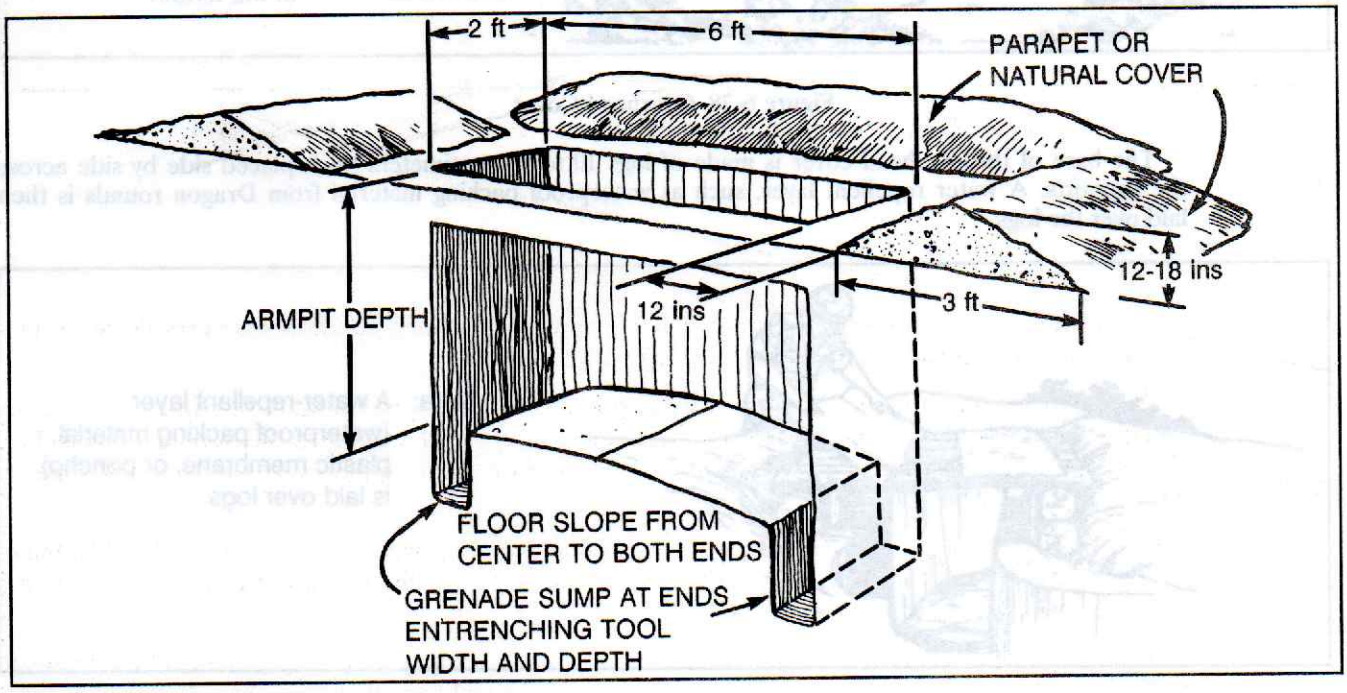


Figure 6-27. Infantry Fighting Position – Two-Man Position (Deliberate).

When preparing the position, leave enough distance between the hole and the frontal cover to let the soldier shoot from a supported position (elbows on the ground); elbow holes help stabilize the shooter's arms and lower his profile. Trenches for the bipod of an automatic rifle help support by putting the rifle close to ground level.

Aiming and sector stakes and grenade sumps should be added to a prepared position. Aiming stakes will help a soldier fire his rifle on dangerous avenues of approach at night. Sector stakes define the right and left sector of fire and prevent accidental firing into adjacent positions. The stakes should not be obvious enough to reveal the position.

A trench-shaped hand grenade sump should be dug at each end of the position. The floor of the position should be shaped so it slopes toward the grenade sump. The sump should be dug as wide as the blade of an entrenching tool, at least as deep as the entrenching tool, and as long as the position is wide.

While frontal, flank, and rear cover give some protection from shell fragments, overhead cover should be built to protect from airbursts (see Figure 6-28). A good position has overhead cover that lets a soldier fire from beneath it. Support for overhead cover is built by placing logs 10 to 15 centimeters (4 to 6 inches) thick on top of each other along the entire length of the frontal and rear cover.

Figure 6-28. Overhead Cover.

The base of the overhead cover is made of logs 10 to 15 centimeters thick placed side by side across the supports. A water repellent layer, such as waterproof packing material from Dragon rounds is then laid over the logs.

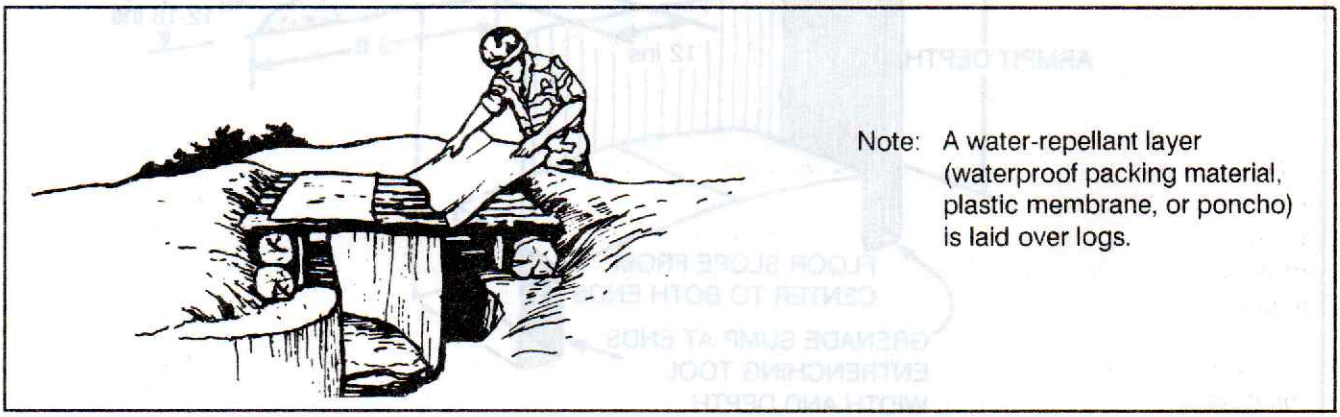


Figure 6-29. Waterproofing.

About 15 to 20 centimeters (6 to 8 inches) of dirt is added, shaped to blend with the slope of the terrain, and camouflaged. When the position is complete, the soldier in the position will have protection from shell fragments and still be able to shoot.

Revetting is used in loose or wet soil to keep the sides from collapsing. Anything that will hold the walls (wire, logs, boards) can be used as long as it is staked and anchored. After anchor lines are attached, the stakes are driven into the ground.

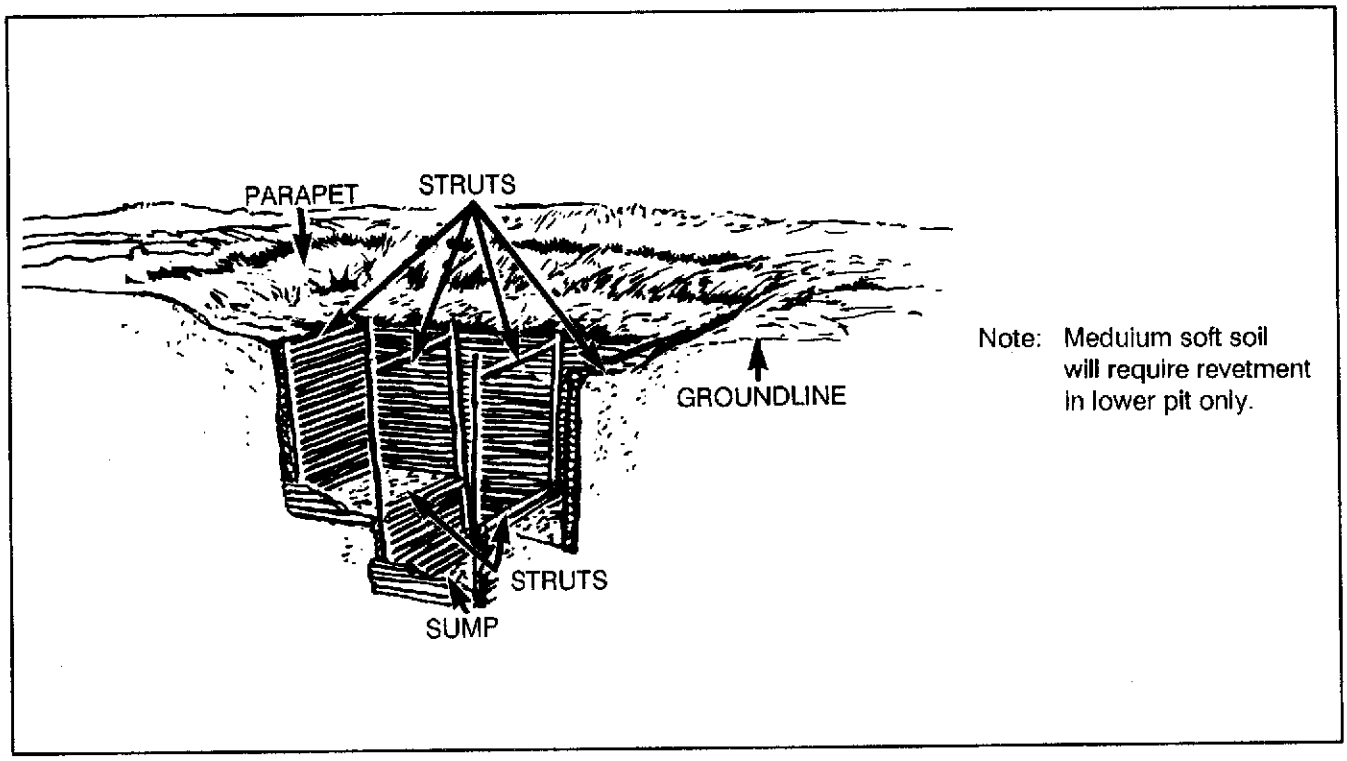


Figure 6-30. Revetment.

The Dragon may be fired from hasty or improved positions, however, the backblast and muzzle blast must be considered when employing the Dragon. When the weapon is fired from an improved position, the muzzle end of the launcher must extend 15 centimeters (6 inches) beyond the front of the hole; as the missile leaves the launcher, stabilizing fins unfold requiring at least 15 centimeters of clearance above the ground.

Dragon positions should be dug only waist deep to allow the gunner to move while firing. The position should be sited to cover its assigned sector of fire and protected to the front by natural or man-made cover. The ground in front of and behind the position should be free of rocks, sand, and debris to prevent a dust cloud (caused by backblast) from obscuring the gunner's vision and revealing the position.

If the Dragon needs to be fired in only one direction, a one-man fighting position is best. The Dragon should be positioned to fire to the oblique so it can be protected from frontal fire while the target is being engaged from the flank.

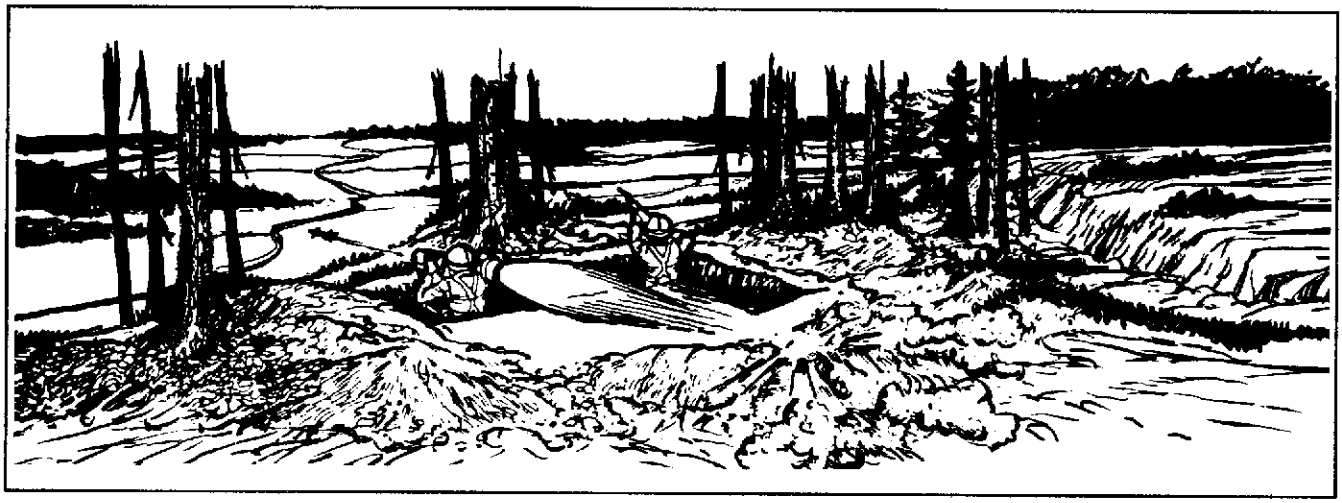


Figure 6-31. Dragon Positions.

COMBAT SERVICE SUPPORT TO ENGINEER UNITS

Engineers are frequently task-organized to a company team. Regardless of the command relationship, coordinate to ensure the engineers have supplies to conduct their mission. In offensive operations, the ammunition and fuel estimates must include engineer requirements. In the defense, keep abreast of the CSS status of engineer units working in support of the unit. During defensive preparations, refueling of earth-moving and mine-laying equipment takes priority over combat vehicles. The recovery and medical teams must always support engineers as they have little or no capability in these areas. Coordination and supervision of delivery and installation of Class IV (barrier materials) is of great concern. The soldiers will assist the engineers in every way feasible to speed and perfect the defensive effort. Do not permit engineers to become idle because of poor coordination for CSS. Instruct the XO and first sergeant to check on the needs of the engineers and see that those needs are met.

Section IV. AIR DEFENSE

Soviet air forces (attack helicopters and high-performance [jet] aircraft) may gain local air superiority and pose a definite danger to US ground units. The company team must be able to defend itself against an air attack when air defense artillery (ADA) systems are not present.

PASSIVE AIR DEFENSE MEASURES

An enemy pilot must see a target to engage it. Use cover and concealment to degrade the enemy's ability to acquire you as his target. Enemy airmen identify positions by the following signatures:

- Track marks, especially if they are obviously fresh.
- Reflective surfaces such as windshields, headlights, goggles, map cases, field glasses, and sunglasses.
- Smoke, exhaust plumes, dust, lights, and contrasting colors.
- Movement.
- Freshly exposed dirt from a foxhole.

If enemy vehicles are in the area but have not attacked, halt the vehicles as close to concealment as possible. Reduce visual signature as much as possible and wait out the aircraft. Attack aircraft, both fixed wing and helicopters, have limited loiter time over the target area. (For more information on camouflage, see FM 5-20. For more information on passive air defense measures, see FM 44-8.)

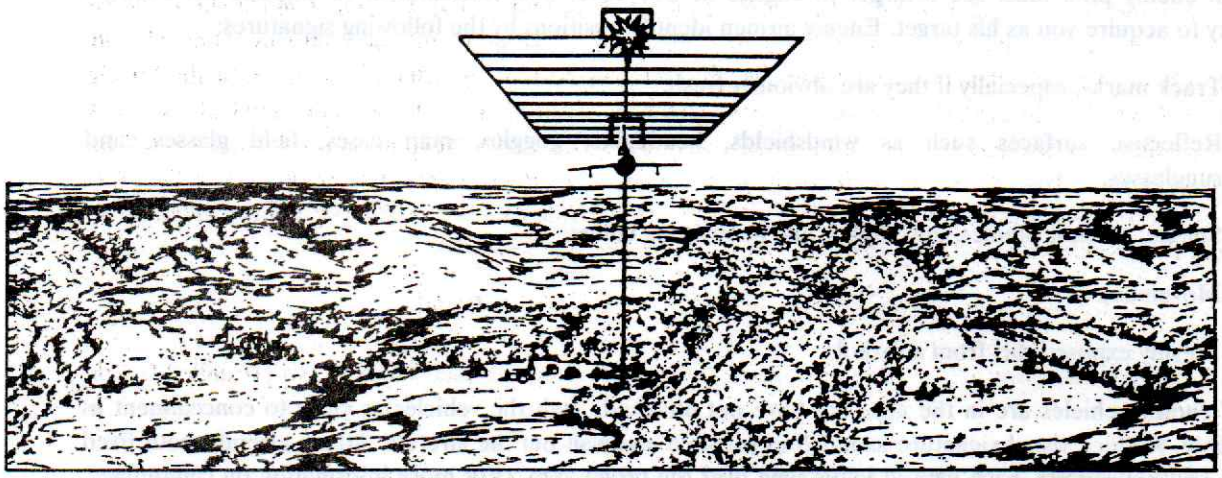
ACTIVE AIR DEFENSE MEASURES

The SOP must designate soldiers or vehicles to watch for enemy aircraft in assigned sectors. To alert the unit, observers use flags, hand-and-arm signals, or audible signals. Enemy aircraft will normally fly low, often down valleys. Enemy helicopters usually appear from behind hill masses and engage at long ranges.

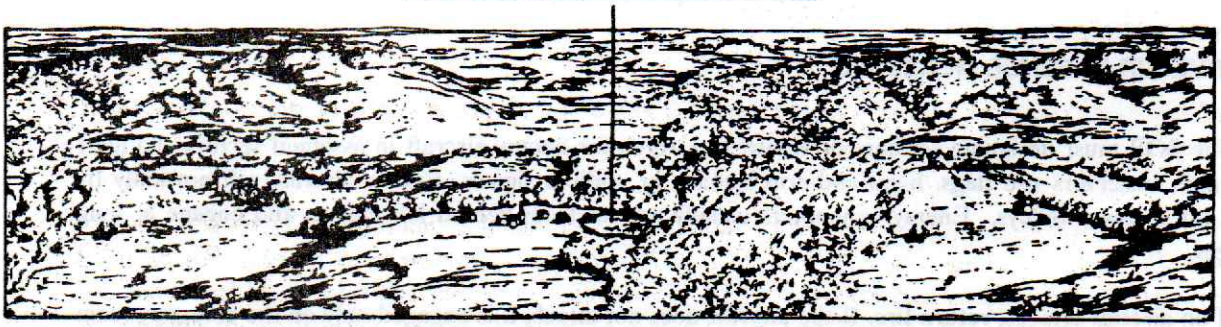
If an aircraft attacks, return fire. If the aircraft does not attack, it is engaged only on the company team commander's order. If supporting ADA elements engage the aircraft, the company team may engage with organic weapons. As a general rule, unless the aircraft is attacking the company, withhold fire and take passive defensive measures. Higher commanders may impose restrictions on air defense fires due to friendly aircraft in the area. Attack helicopters are very dangerous to armored vehicles. Engage attack helicopters with artillery if they have not identified your position. If you have been identified, engage attack helicopters with SABOT.

When the commander decides to engage the enemy aircraft and gives the order to do so, the company team engages with organic weapons using volume fire. Volume fire places a wall of lead in front of the target for the aircraft to fly into. Every weapon that can be brought to bear, including tank main gun and 25-mm chain gun, is fired. Every gunner selects an aiming point and fires at that point. (See FM 44-8.)

LEAD FAST TARGETS (JET AIRCRAFT) BY 2 FOOTBALL FIELDS



LEAD SLOW TARGETS (HELICOPTERS AND
PROPELLER DRIVEN AIRCRAFT) BY HALF A FOOTBALL FIELD



TYPE	COURSE	AIMING POINT
JET	CROSSING	2 FOOTBALL FIELDS IN FRONT OF NOSE
JET	OVERHEAD	2 FOOTBALL FIELDS IN FRONT OF NOSE
JET	DIRECTLY AT YOU	SLIGHTLY ABOVE AIRCRAFT NOSE
HELICOPTER	CROSSING	1/2 FOOTBALL FIELD IN FRONT OF NOSE
HELICOPTER	HOVERING	SLIGHTLY AVOVE HELICOPTER BODY
HELICOPTER	DIRECTLY AT YOU	SLIGHTLY ABOVE HELICOPTER BODY

Figure 6-32. Aiming Point System.

WEAPONS CONTROL STATUS

Air defense fires are controlled by the rules of engagement and by the weapons control status established by the area air defense commander. These are usually SOP items for the company team. The air defense crew or section leaders decide whether an aircraft is hostile (by visual observation, or the hostile criteria). Once hostile aircraft is identified, engagement is controlled by the weapons control status. A more restrictive status may be imposed but the use of a less restrictive weapons control status cannot be directed. More restrictive measures are normally used when friendly CAS and helicopters are in the area. The company FSO must alert the air defense crews when friendly CAS or helicopters are inbound to prevent the engagement of friendly aircraft. Weapons control statuses are—

- Weapons free—may fire at any aircraft not positively identified as friendly.
- Weapons tight—fire only at aircraft positively identified as hostile (according to the prevailing hostile criteria).
- Weapons hold—do not fire (except in self-defense or in response to a direct order).

ADA SYSTEMS

ADA systems may work in your sector or zone. Be aware of their presence and be prepared to support them logistically, especially with medical coverage and vehicle recovery.

The *Stinger* crew consists of two personnel in an high-mobility multi-purpose wheeled vehicle (HMMWV) with FM radios. The unit basic load (UBL) for a Stinger crew is six missiles. For planning purposes, the missile's range is 5 kilometers. Because of the prime mover's vulnerability to direct and indirect fire, the Stinger is best employed with overwatch elements. The air defense commander designates the crew's firing positions to meet the stated ADA priorities of protection, and coordinates with the company team commander on the ADA crew's location within the area. If an ADA crew is supporting the company team, the crew chief coordinates with the commander for positioning of the crew's system to support the concept of the operation. The crew is an excellent source for early warning of approaching aircraft; use this advantage when employing the organic weapon systems and when planning a defense against attacking aircraft.

Mobile air defense systems will be available on occasion. If the mobility of air defense weapons is equal to that of tanks and APCs, they should be integrated into the formations. Examples of these formations are shown in Figures 6-33 through 6-36.

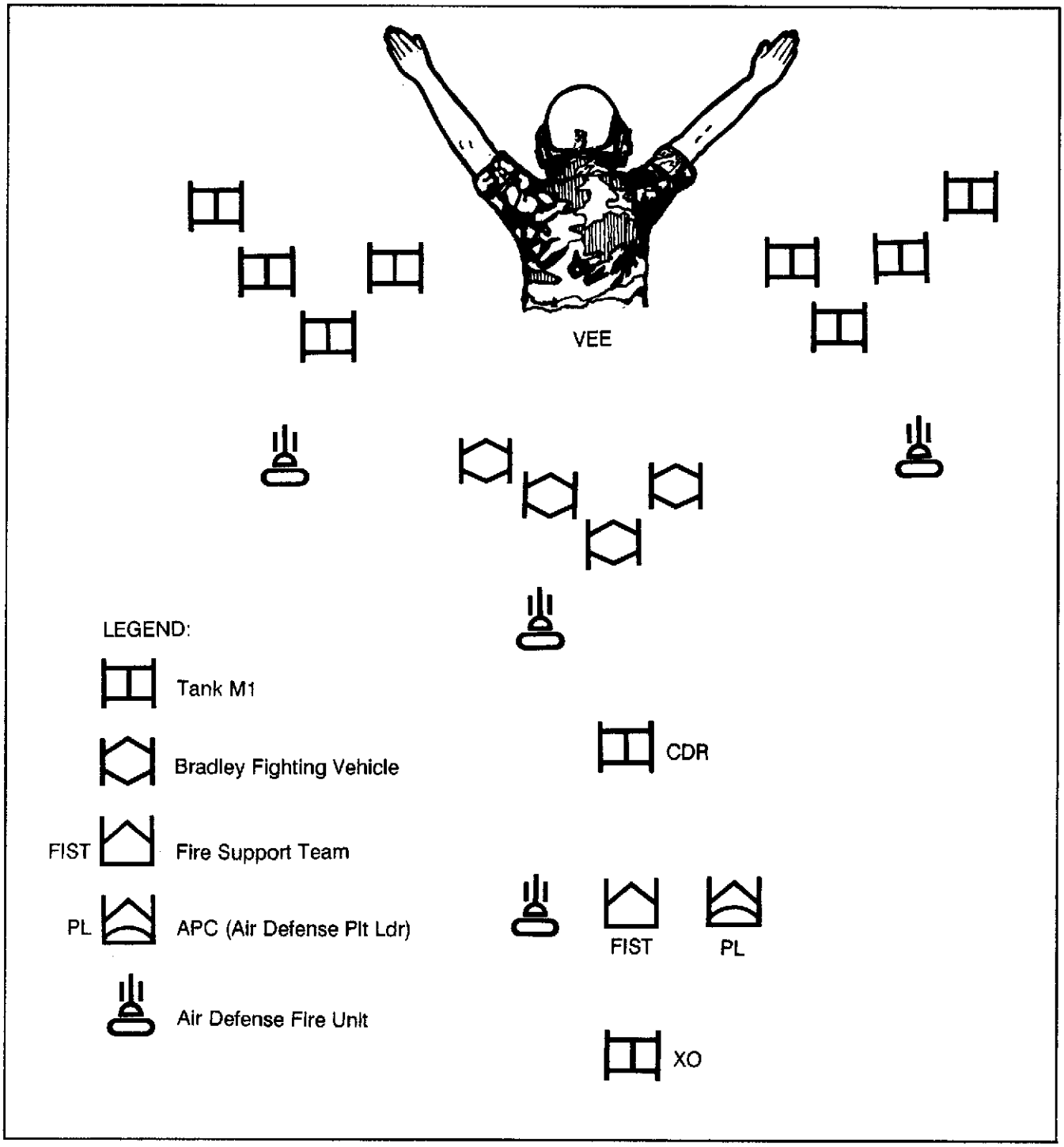


Figure 6-33. Air Defense Systems in the Company Team Vee.

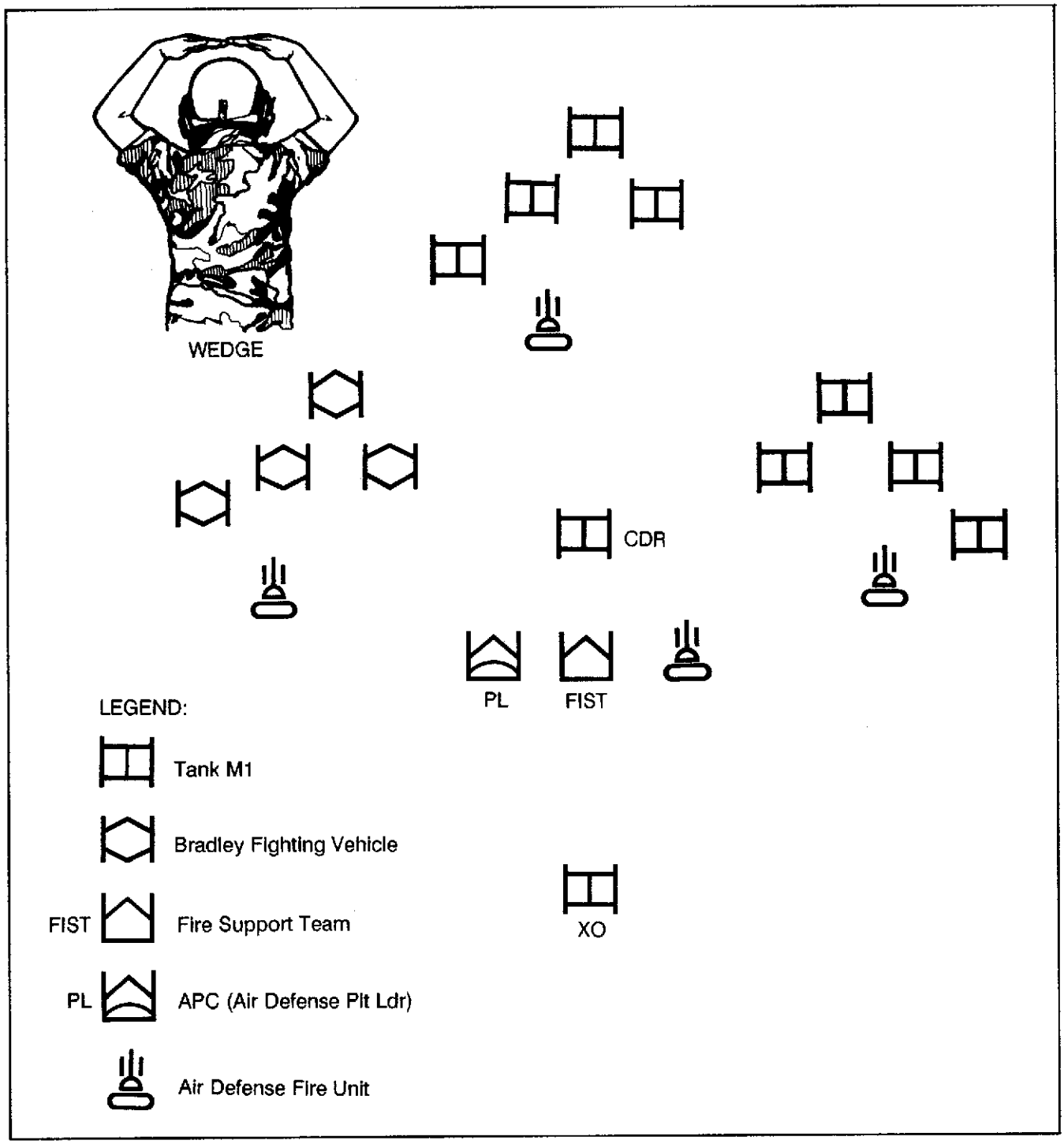


Figure 6-34. Air Defense Systems in the Company Team Wedge.

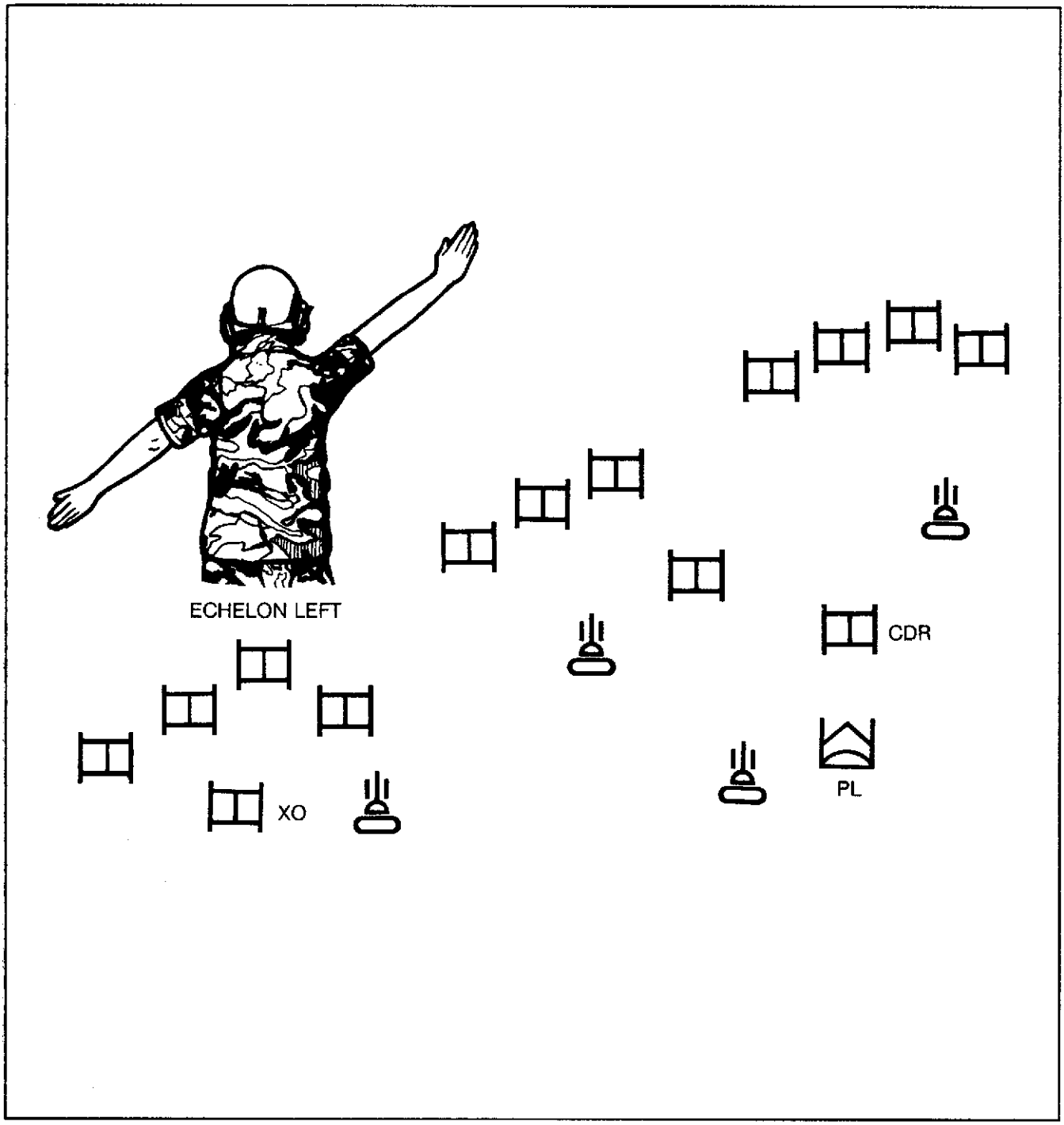


Figure 6-35. Air Defense Systems in the Company Team Echelon Wedge (Left).

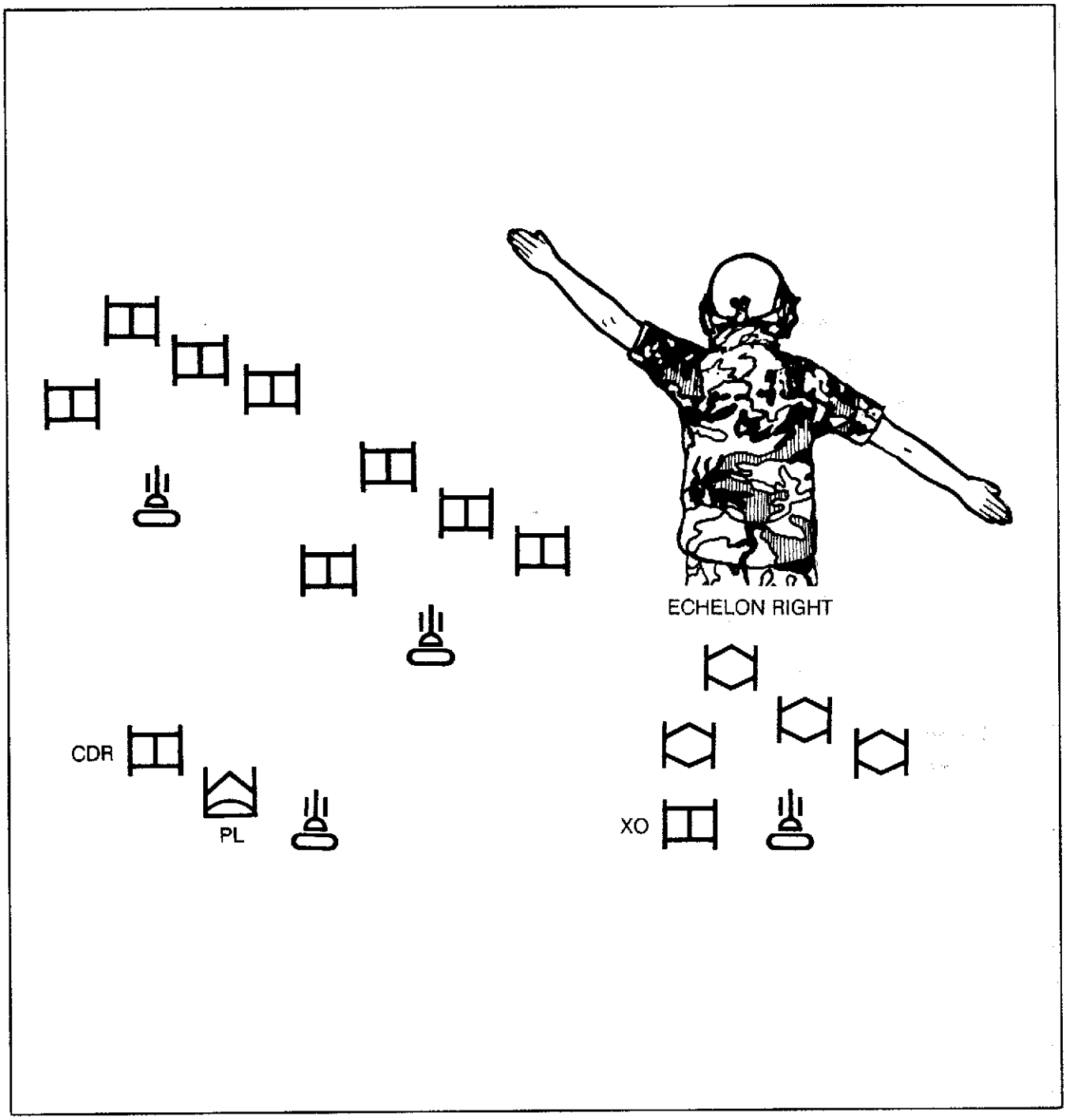


Figure 6-36. Air Defense Systems in the Company Team Echelon Wedge (Right).

In most instances, the Vulcan gun system is unable to maintain formation with tanks and BFVs. When the company team is reinforced with Vulcans, position them on the flanks and in preselected firing positions to make use of their limited range of 1,200 meters. (For additional information on ADA systems, see Chapter 4, FM 44-3.)

EMPLOYMENT OF ADA SYSTEMS

Normally, ADA systems available to the battalion task force will be retained under battalion task force control. The ADA platoon leader positions his elements to provide protection as specified by the battalion task force commander's ADA priorities.

If a Stinger crew is attached to a company team, specify the ADA priority of protection. In an offensive operation, consider the effects of terrain and indirect fire on the crew's HMMWV. Usually the HMMWV cannot keep up with the platoons, and will not survive indirect fire. To counter this, place a Stinger crew member in an armored vehicle (infantry platoon leader, infantry XO, or FSO) with two missiles. (Placing the Stinger crew with an overwatch platoon is preferred.) The Stinger crewman must dismount for engagements and will, therefore, slow the vehicle; a drill and a signal to the company team should be established. The Stinger crew wheeled vehicle then moves with the company team trains.

During offensive operations, air defense platoons are normally direct support to the task force and positioned by the ADA commander with the approval of the task force commander. They may be directed to accompany the lead company team to provide protection based on stated ADA priorities of the battalion task force.

In defensive operations, air defense elements will be given a mission and positioned as noted in the previous paragraph. They are normally direct support to the task force. Normally, ADA systems monitor the parent unit, early warning, and supported unit nets.

Although darkness degrades the effectiveness of an enemy air attack, it also degrades the effectiveness of Vulcan, Stinger, and Chaparral. Aircraft can be detected and acquired through means such as radar, forward looking infrared (FLIR), sound, moonlight, reflected light, and engine exhaust flames; ranging and positive identification may be difficult. Temporary night blindness caused by firing weapons further handicaps weapon crews conducting engagements at night.

Tell-tale missile signatures may disclose the company team location to enemy aircraft, or subject the defended area to close scrutiny by enemy intelligence. This may, in turn, result in an attack on the firing unit or collocated assets by enemy air, field artillery, or maneuver units. The probability of destroying an aircraft may be decreased by tracer streams of automatic weapon systems and missile signatures; but these may also diminish the effectiveness of the attacker by causing him to either abandon his mission or fail to deliver his ordnance accurately.

Since participation in the air battle by ADA units may be reduced at night, platoon leaders should take advantage of this potential lull and the concealment afforded by darkness and –

- Move weapons to new, alternate, or supplementary positions.
- Improve positions.
- Resupply weapons and crews (ammunition, POL, and rations).
- Perform required maintenance.

- Position weapons to provide better security against ground attack. Whenever possible, squads should be moved to establish a collective defensive position with the force they are supporting.
- Use Vulcan in defense against ground attack, depending on the criticality of the situation and the availability of ammunition.
- Allow maximum crew rest by lowering alert state for ADA crews or squads (as the situation permits).

When the company team moves at night, the supporting ADA unit should move with it so ADA will be in position at BMNT. However, this is governed by the factors of METT-T. For example, ADA weapons such as FLIR-equipped Chaparrals may accompany the lead maneuver element and be prepositioned along the route of advance.

Resupply of ADA assets must be planned. The supported maneuver element must be prepared to assist with this as necessary, regardless of the command relationship between the company team and the ADA unit. The ADA platoon leader at the maneuver battalion level must ensure the logistical support of his assets. Each air defense platoon assists with the resupply effort. These vehicles and personnel should be integrated into the company team's supporting CS assets. This cooperative effort might also have to be extended beyond Class V to Classes I and III, especially in the offense when supply and communication lines are extended.

Section V. INTELLIGENCE AND RECONNAISSANCE

Most of the information about the enemy comes from the S2 intelligence reports, platoon reports, and your own observations. Artillery FDCs have information about the enemy; obtain this information from the FSO. Additional information about the enemy and area of operations is available from adjacent and supporting units.

The battalion S2 provides information about the enemy, terrain, and weather. The S3 provides specific taskings as part of the battalion task force reconnaissance, counterreconnaissance, and surveillance plan. The task force S3 is responsible for integration of the battalion task force reconnaissance and surveillance plan. Convert the taskings into missions for the company team and include this in the order.

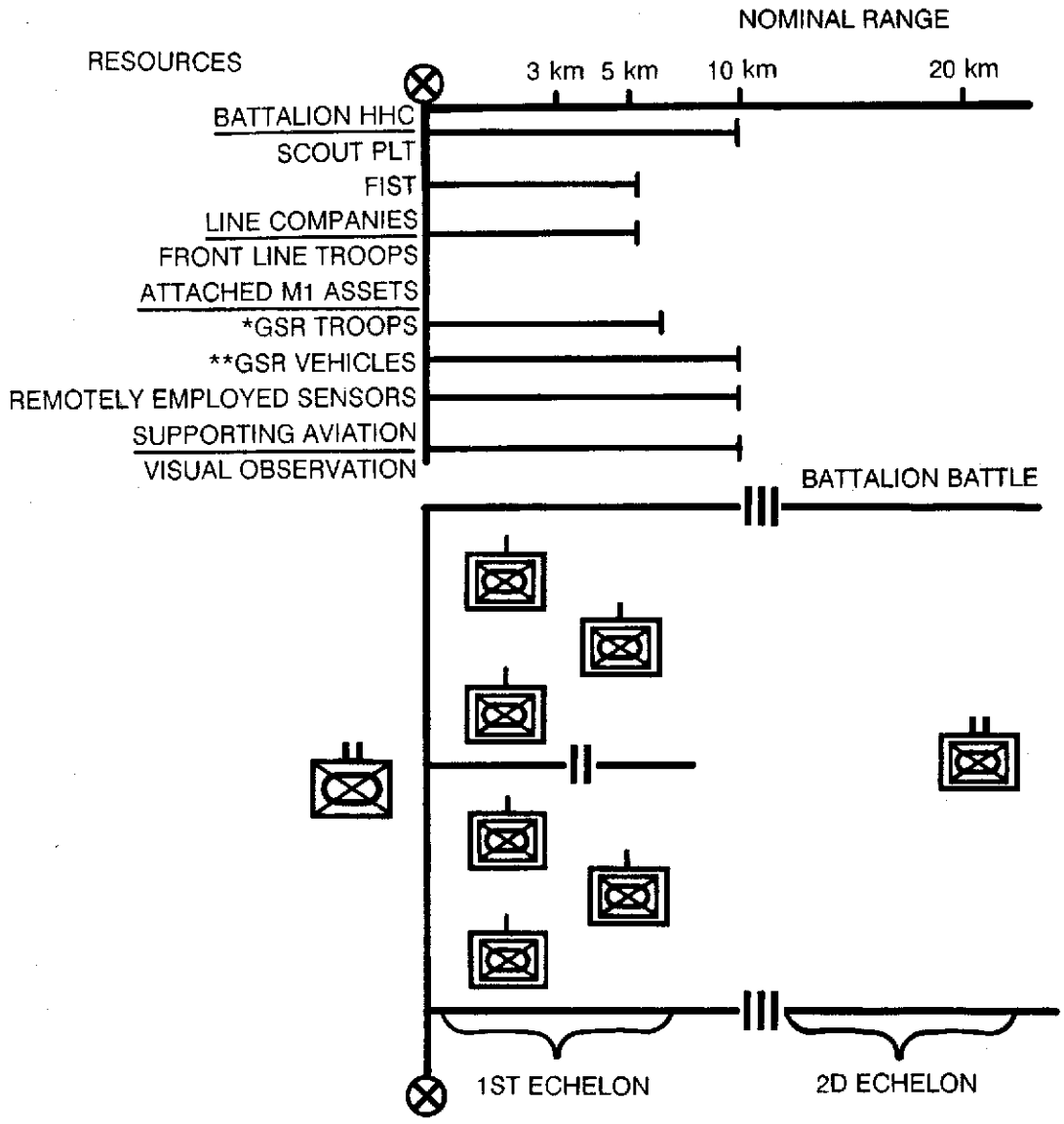
The commander is the company team intelligence officer. He must actively seek information about the enemy, terrain, and weather from all sources available. Use patrols and observers to fill in gaps in the sector.

Intelligence and reconnaissance elements habitually operate in or to the front of the company team. The battalion scout platoon, GSR, and other intelligence assets may be attached to the unit for a specific mission. Know what the most typical of these units can do, how they can be employed, what their limitations are, and what support they need. (See Figure 6-37.)

SCOUT PLATOON

The scout platoon has six M3 Bradley cavalry fighting vehicles (CFV) or three M113s and three M901 ITVs. Normally, they will operate under battalion control, but they may be task-organized to the company team if the mission dictates. For example, if the company team is responsible for the task force screen or detached to perform a flank screen or forward security force mission for the brigade, it may get the scouts.

When the scout platoon is task-organized to the company, there will be specific guidance in the order for tasks that must be accomplished using scouts. Normally, the company FSO must coordinate fires for



*Light division troop range is 1.5 kilometers.

**Light division vehicle range is 3 kilometers.

Note: Range is approximate. Nominal range is for initial planning; actual range depends on weather, terrain, enemy deployment, and location of enemy sensors.
Remotely employed sensors are currently in airborne divisions only.

Figure 6-37. Battalion Resources.

the scouts and he may accompany them to accomplish the fire support tasks specified in the task force plan. Provide other CS and CSS within the company team's capability.

Scouts provide information; they do not fight unless forced into engagement. The company team supports the scouts, either by direct overwatch or by limited counterattacks, to allow them to perform their mission. When the scouts work for the company team, the scout platoon leader will monitor the company command net, not the battalion command net. You then pass their reports to the higher commander and the S2.

Scouts will frequently lead during offensive movements. If frontages are particularly wide, the scout platoon may work the main avenue while mechanized infantry platoons reconnoiter other avenues. Tank platoons are kept concentrated, available to overwatch; reinforce or overwatch the withdrawal of the deployed scouts as the situation dictates.

In defensive situations, scouts identify and report enemy reconnaissance and infiltration efforts. Tank platoons reposition as necessary to intercept and destroy the enemy. To prevent fratricide, careful coordination and clear vehicle identification and marking systems are necessary when the scouts withdraw. A team commander is responsible for the safe passage of the scouts through any obstacles and EAs in the sector.

(Additional information on scout platoon employment is found in FM 17-95 and FM 17-98.)

GROUND SURVEILLANCE RADAR

The GSR platoon is part of the military intelligence battalion (CEWI). A GSR team consists of one vehicle (CUCV, HMMWV, or M113), an AN/PPS-5 or AN/PPS-15 radar, and three men. GSR is near all weather, line of sight, and surveillance systems. It can operate in rain, fog, smoke, light snow, and darkness. It can usually provide long-range surveillance in conditions which block thermal sights. (Heavy rain and snow will degrade GSR performance.) The capabilities of the two radars are shown in Figure 6-38.

	AN/PPS-5	AN/PPS-15
RANGE (km)		
VEHICLES	10	3
PERSONNEL	6	1.5
SCAN WIDTH	120°	120°
DATA PROVIDED	AZ/RANGE TO TARGET	AZ/RANGE TO TARGET

Figure 6-38. Capabilities of the AN/PPS-5 and AN/PPS-15.

GSR is normally controlled by the battalion S2, but may be assigned positions in the company sector or attached to the company. If GSR is employed in your sector, you may be tasked to provide food; security; fuel; petroleum, oils and lubricants (POL); medical; and vehicle evacuation support. Your responsibilities will be defined in the specific coordinating instructions or intelligence annex of the operations order.

In some cases, GSR may be attached to the company. If so, provide the support required by this command relationship. Use the radars in any of several ways to support operations:

- Area reconnaissance—to monitor a large area like an avenue of approach into the sector or an exposed flank during offensive operations. The radar team should be deployed on high ground that provides good observation of the area, concealment, and routes into and out of the position. The radar team will report to the commander on the company command net.
- Point surveillance—to monitor a specific point like a road intersection, bridge, or mountain pass.
- Adjusting artillery or mortars—to detect the impact of indirect fires, can be used to adjust fires.
- Vectoring friendly movements—to monitor friendly troops on patrols or during attacks. Feedback can be given over company or platoon nets.

Intelligence from attached radars must be forwarded to the S2 on the appropriate net. GSR can be detected by enemy electronic warfare units. It can be located by direction-finding equipment and jammed. Consequently, it is not used continuously.

If the radars are attached, you will be required to provide maintenance support for the common equipment (vehicle and radios). Military intelligence (MI) specific equipment, such as GSR, is evacuated through the MI battalion to the division support command (DISCOM). Provide all other CSS within your capability, just as you would for an assigned platoon.

Section VI. AVIATION

AIR ASSAULT OPERATIONS

Mechanized infantry units occasionally conduct air assault operations. Air assault operations exploit the speed and mobility of helicopters to seize objectives, reinforce defensive sectors, and place combat power at the decisive point on the battlefield. The mission-essential task list (METL) may require high proficiency in air assault operations. (Detailed information is available in FM 90-4.)

ATTACK HELICOPTER

Attack helicopters will often fly and fight in the area. A company team commander should be familiar with their missions because they may influence company operations. (FM 1-100 describes generic aviation missions. FM 1-112 contains information regarding mission and employment of attack aircraft.)

Section VII. SIGNAL

The company team will rarely have to deal with attached signal units in a tactical context. It may be required to provide security and CSS to isolated signal elements such as a retransmission vehicle or site.

(Internal company team signal considerations are explained in Chapters 3 and 4.)

Section VIII. CHEMICAL

Chemical units are rarely attached to company teams. Under unusual circumstances, a chemical reconnaissance team of one wheeled vehicle and three to four personnel may be attached to the company team to perform a specific mission. On occasion, you may collocate with or receive an attached smoke platoon. The company team usually provides security and assists in CSS of the smoke unit. (Appendix E provides additional information on smoke unit employment. Appendix D covers other chemical considerations.)

This chapter implements STANAG 2044.

CHAPTER 7

COMBAT SERVICE SUPPORT

CSS organization begins at company level, but the burden of CSS is removed from the company team commander (the only organic CSS asset at company level is the supply section) and placed under control of the battalion task force. This allows the company team commander to concentrate on fighting to accomplish the tactical mission.

The company team's CSS responsibility is to report and request requirements and make sure CSS is properly executed when it arrives in the company area. The XO and first sergeant will normally perform this function. They send personnel and logistical reports and other necessary information and requests to the rear.

The bulk of the tank and mechanized infantry battalion CSS assets are assigned to the HHC. Personnel and equipment (including POL assets) from the medical platoon, maintenance platoon, and transportation section of the support platoon are designated to support each maneuver company team's combat operations.

Section I. RESPONSIBILITIES

COMMAND AND CONTROL

The *company team commander* is responsible for CSS of the company team. During combat operations, the XO and first sergeant help.

The *XO* is the CSS planner and coordinator. During preparation of the operation, he coordinates closely with the first sergeant to determine what is required and makes sure arrangements have been made for CSS to support the tactical plan. In addition to his tactical requirements, the XO—

- Determines the general location for the company resupply point.
- Receives periodic maintenance updates from platoon leaders, platoon sergeants, the first sergeant, and the maintenance team chief.

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The *first sergeant* is the CSS operator. He executes the company logistical plan, relying heavily on the company and battalion SOP. The first sergeant directly supervises and controls the company trains. He receives CSS reports from the platoon sergeants, provides information to the XO, and helps the XO complete CSS preparations and plan and conduct CSS operations. He also—

- Receives, consolidates, and forwards all administrative, personnel, and casualty reports to the task force combat trains.
- Directs the medical evacuation section and company maintenance team (CMT) forward when the situation requires.
- Establishes and organizes the company team resupply point.
- Meets the LOGPAC at the LRP, guides them to the company resupply point and supervises the operations there.
- Orients new personnel to the company and assigns replacements to the platoons.
- Supervises the evacuation of casualties, enemy prisoners of war (EPW), and damaged equipment.
- Maintains the battle roster for the company.

The *supply sergeant* is the company's representative in the battalion field trains. He assembles the standardized LOGPAC and moves it forward to the battalion LRP. The supply sergeant follows the first sergeant to the company resupply point and assists in the resupply operation. He also—

- Requisitions Classes II, IV, VII, VIII, and IX items.
- Coordinates with the support platoon leader for Classes I, III, and V supplies.
- Maintains individual supply and clothing records.
- Picks up personnel replacements at the task force field trains and prepares them for the first sergeant.
- Receives and evacuates KIA to the graves registration point in the brigade support area (BSA).
- Returns LOGPAC with EPW and damaged vehicles to the BSA for further disposition.

The *CMT chief* is assigned to HHC but attached to the company. He—

- Organizes and supervises the CMT:
  - –Battle damage assessment and repair (BDAR) procedures.
  - –Mission-essential maintenance only (MEMO) procedures.
  - –Maintenance time guidelines.
- Advises the XO and first sergeant on vehicle recovery, repair, and destruction.
- Ensures requests for repair parts are prepared and forwarded to the UMCP.
- Distributes repair parts when they are received.
- Supervises exchange and cannibalization when authority is delegated to him.
- Coordinates with platoon sergeants for maintenance status of their platoon (if not already provided by the first sergeant).
- Is responsible for recovery operations to the UMCP or other designated maintenance collection points.

The *senior aidman* is assigned to HHC but attached to the company. He –

- Supervises triage of wounded and ill (enemy and friendly).
- Advises the chain of command on wounded and ill.
- Provides first aid and stabilizes injured for evacuation.
- Evacuates seriously wounded under the direction of the first sergeant.
- Controls, issues, and requests resupply of Class VIII, including nerve agent antidote injectors.
- Trains soldiers in first aid procedures.
- Is responsible for the medical evacuation team operations.
- Advises the chain of command on field sanitation measures.

COMPANY TRAINS

During combat operations, the company habitually operates with the maintenance and medical teams forward (company combat trains). The remainder of its CSS elements operate from the battalion combat trains, UMCP, or the field trains in the BSA. The first sergeant is responsible for all of the company trains, but directly supervises the company combat trains. The supply sergeant is the first sergeant's principal assistant and supervises the company's assets in the battalion field trains.

The company combat trains will normally operate about 500 to 1,000 meters (or one terrain feature) to the rear of the company team to provide immediate recovery, medical aid, and maintenance. This allows maintenance and other essential CSS functions to be performed in covered and concealed positions behind the FLOT.

Usually, support during the battle will be limited to medical and maintenance activities. Emergency resupply is performed by the first sergeant.

During a battle (defensive or offensive), the first sergeant continuously monitors the company command net and sends medical and maintenance support forward to the platoons. The first sergeant keeps the combat trains CP informed on a continuing basis, either by radio or messenger.

Section II. SUPPLY FUNCTION

The supply sergeant is responsible for obtaining and delivering supplies to the company. He delivers small items and depends on the assets of the support platoon to deliver bulky or high-expenditure items. Priorities for delivery are established by the company commander, but the demands of combat will normally dictate Classes I, III, and V supplies as most critical to successful operations.

Class I is rations and gratuitous issue of health, morale, and welfare items. Meals ready to eat (MRE) are stocked on board each vehicle in a basic load prescribed by SOP (usually three to five days). MRE and water are delivered daily to the company from the field trains by the supply section. Hot meals are served when possible. Water is provided from the water trailer brought forward by the supply sergeant. (Water is a critical item and must be replenished daily, especially when the unit is wearing chemical protective clothing.) Rations are automatically requisitioned and issued by the S4 section, based on daily strength reports sent to the S1 by the companies.

Class II is clothing, individual equipment, tentage, tool sets, and administrative and housekeeping supplies and equipment. Class II items are requisitioned by the S4 based on needs identified by company

supply sergeants. The supply sergeant normally receives these supplies in the field trains and moves them forward as required.

Class III is petroleum, oil, and lubricants. Class III bulk and packaged products are delivered to the company by the support platoon. Resupply is accomplished from the battalion field trains as requested by the first sergeant. If tankers are attached to the company, they will return to the Class III point in the BSA for refill as soon as the company has been refueled. Small amounts of packaged products (hydraulic fluid, lubricating oil) are stored on each combat and tactical vehicle. These are replenished from stocks on bulk fuel tankers.

Class IV is construction materials. Class IV items are requested through command channels. Basic loads of materials required for the construction of individual fighting positions should be a part of each vehicle load plan and specified in the company team SOP.

Class V is ammunition. Class V resupply is based on a report of expenditures submitted to the combat trains CP by the first sergeant. The ammunition is delivered to the company by the LOGPAC. Ammunition will be prepositioned (in a defense or delay) or distributed as part of service-station or tailgate resupply.

Class VI is personal demand items sold through post exchanges. Class VI items are requested from the S1 by the first sergeant.

Class VII is major end-items. Class VII items are requisitioned and issued through the S4. Crews will be assigned and combat vehicles will normally be moved forward as part of the LOGPAC convoy. When combat vehicles are required forward before the LOGPAC is scheduled to depart, the combat vehicles are led forward by the supply sergeant, if no one else is available. The first sergeant meets the crews and briefs them before they are committed.

Class VIII is medical supplies. Class VIII items are provided by the medical platoon. Requests are submitted to the battalion task force aid station by the medics and issued to the medics by the aid station.

Class IX is repair parts and documents for equipment maintenance. Class IX items are requested through the prescribed load list (PLL) clerk. They may be delivered by LOGPAC or the maintenance platoon, or the maintenance team may have to return to the UMCP to pick them up.

Maps are requested from the battalion task force S4.

Section III. RESUPPLY OPERATIONS

Resupply operations can be described as routine, emergency, and prestock. Each method is developed in the company SOP and rehearsed in training. The actual method selected will depend on METT-T.

Routine resupply operations are the regular resupply of Classes I, III, V, and IX items; mail; and any other items requested by the company. Routine resupply will take place at least daily. Periods of limited visibility are the best times to resupply. Resupply Class III at every opportunity. M1 units in offensive operations routinely require refueling twice each 24 hours. The LOGPAC technique is a simple, efficient way to accomplish routine resupply operations. The company team and battalion SOPs will specify the exact composition and march order of the LOGPAC. A LOGPAC is a centrally organized resupply convoy originating at task force field trains. The LOGPAC should contain all anticipated supplies required to sustain the company for a specified time (usually 24 hours or until the next scheduled LOGPAC operation).

Company supply sergeants assemble the LOGPAC under the supervision of the support platoon leader or HHC commander in the battalion field trains. Replacements and soldiers released from the hospital are brought to the company on LOGPAC vehicles. Once the LOGPAC is prepared for movement, the supply sergeant tactically moves it as part of the task force resupply convoy led by the support platoon leader. In emergencies, a company LOGPAC may be dispatched individually to meet the first sergeant at a rendezvous point. This technique is not recommended because, when moving alone, the LOGPAC is very vulnerable to attack, loss of communication, and misorientation.

The task force LOGPAC convoy is met at the task force LRP by representatives from the combat trains and UMCP, company first sergeants, and platoon sergeants from specialized separate platoons when necessary. The first sergeant—

- Turns in routine reports to combat trains representatives.
- Turns in parts requisitions and the deadline status to the UMCP representative.
- Picks up routine correspondence.
- Awaits the LOGPAC.

The first sergeant or his representative meets the LOGPAC and then guides the LOGPAC to the company resupply point.

RESUPPLY METHODS

The first sergeant establishes the company resupply point using either the service-station or tailgate method. The commander, or the XO if delegated, decides on the method to be employed and informs the first sergeant. The first sergeant briefs each LOGPAC vehicle driver on the resupply method to be used. He also establishes the company team resupply point and notifies the commander that it is prepared. The commander directs the platoons to conduct resupply based on the tactical situation. Either of these methods, or variations thereof, can be used for emergency resupply.

Service-Station Method

When the service-station method is used, individual vehicles move back to a centrally located rearm and refuel point. Based on the enemy situation, one vehicle per platoon, section, or even an entire platoon pull out of their positions, resupply, and return to their positions until the company has been resupplied. In this method—

- Tactical vehicles enter the resupply point following one-way traffic flow.
- Only vehicles requiring immediate unit or higher maintenance stop in the maintenance holding area before conducting resupply.
- If wounded in action (WIA), KIA, and EPW have not already been evacuated, they are removed from the platoon vehicles when the vehicles stop at the refuel or rearm point.
- Vehicles rearm and refuel moving through each point.
- Crews rotate individually to feed, pick up mail, pick up supplies, and refill or exchange water cans.
- When all vehicles have completed resupply, they move to the holding area where the platoon leader or platoon sergeant conducts a precombat inspection (time permitting).

Note: The medical evacuation vehicle is positioned an equal distance between the refuel and rearm points to decrease the number of stops a vehicle makes.

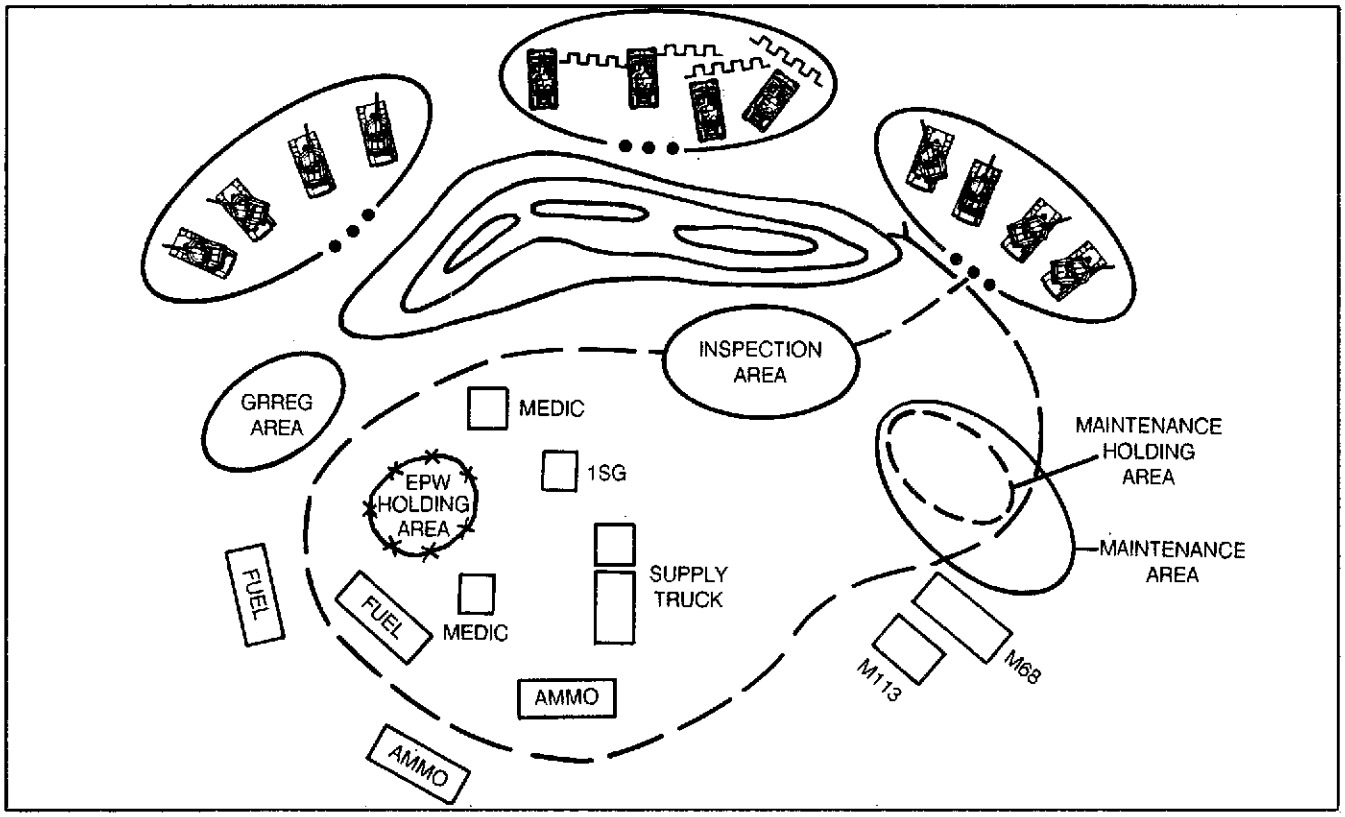

Figure 7-1. Service-Station Method.

Tailgate Method

In the tailgate method, combat vehicles remain in place or back out of their position a short distance so the resupply vehicle is not exposed. POL and ammunition trucks go to each vehicle position in turn and—

- Individual crewmen rotate through feeding areas and pick up supplies, water, and mail.
- KIA and personal effects are brought to the holding area by platoon personnel.
- Armored ambulances pick up critically wounded. Other wounded personnel either are carried or walk to the ambulances for first aid.
- EPW are centralized and guarded.
- Vehicles requiring maintenance are brought to the maintenance area.
- Inspections are completed by the chain of command at each vehicle position.

Note: The tailgate method is normally conducted in an assembly area only. If it is employed in forward positions, resupply must be masked by terrain. This procedure takes much longer than the service-station method.

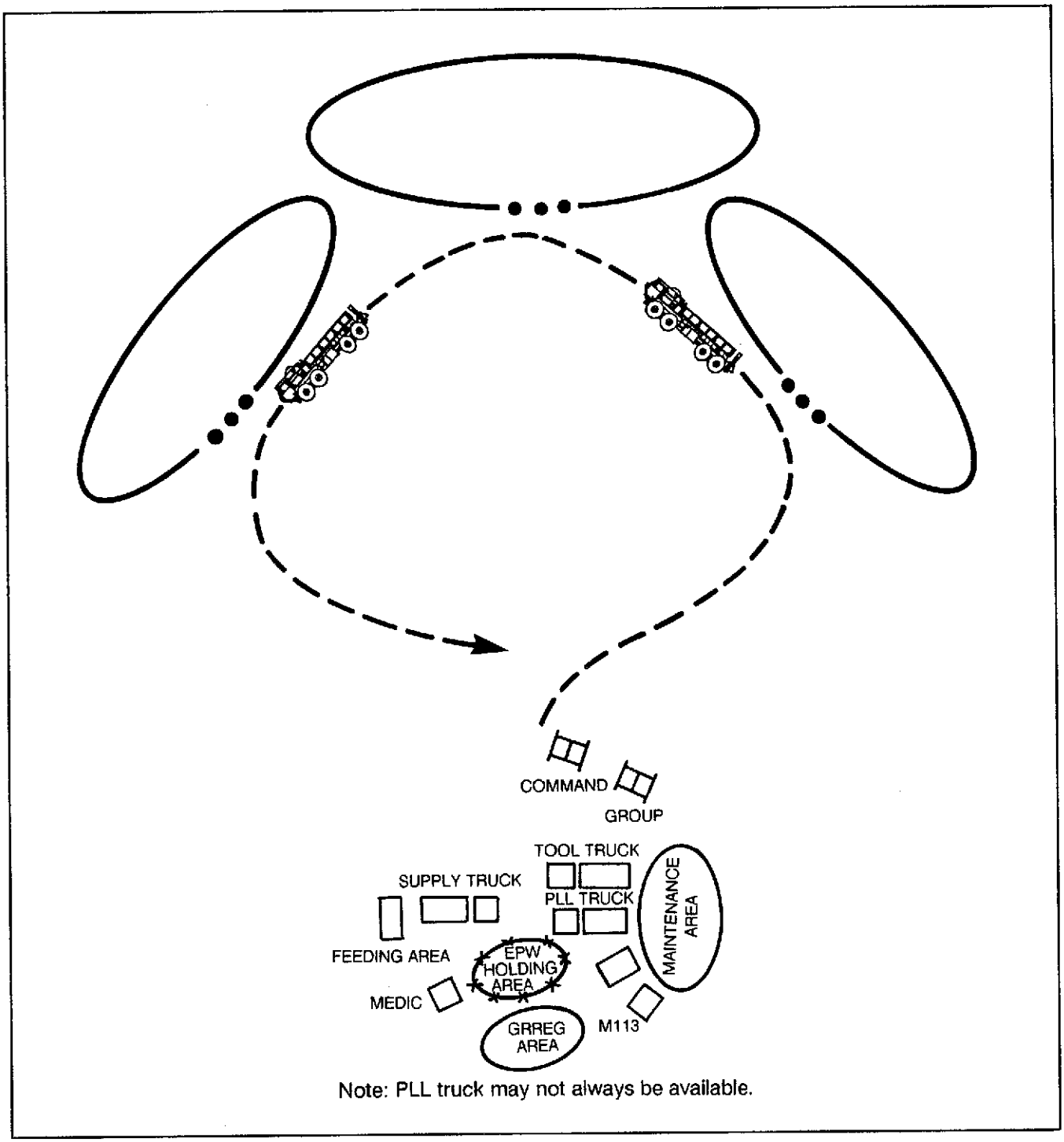

Figure 7-2. Tailgate Method.

PREPARATION OF LOGPAC TO RETURN TO BATTALION TRAINS

When resupply operations are completed, the LOGPAC vehicles are prepared for the return trip. Preparations include:

- Vehicles requiring recovery for maintenance or salvage are prepared for towing and lined up (if not previously recovered to the UMCP).
- KIA are placed in mortuary bags or wrapped in blankets or ponchos and placed on fuel trucks, cargo trucks, or disabled vehicles.
- Slightly wounded (not already evacuated by air or ground ambulances) are put on cargo trucks or disabled vehicles for transportation to the LRP.
- EPW are consolidated on damaged combat vehicles or empty cargo trucks and guarded by walking wounded, infantrymen from cross-attached platoon, or other company team personnel.

The first sergeant or supply sergeant returns the LOGPAC to the LRP where it is met by the support platoon leader. When possible, the reunited task force LOGPAC convoy returns to the field trains together. When METT-T requires, a company LOGPAC is dispatched individually to the field trains. Returning a company LOGPAC individually is only slightly less hazardous than dispatching it forward on its own.

EMERGENCY RESUPPLY

Occasionally, the company team may have such an urgent need for resupply that it cannot wait for a routine LOGPAC (normally a result of combat). Emergency resupply may involve Classes III, V, and VIII; NBC equipment; and, on rare occasions, Class I. The task force will usually use support platoon and medical assets located in the task force combat trains to conduct emergency resupply of company teams. Emergency resupply is often conducted while in contact with the enemy. Consider the following special techniques:

- When platoons are under fire, limited supplies can be brought forward to the closest concealed position where the tailgate method can be used.
- Individual fighting vehicles drop back to resupply at the direction of the platoon leader, and then return to fight. (If resupply is conducted during a lull in combat, the service-station method may be appropriate.)

PREPOSITIONING SUPPLIES

Prepositioning supplies is required in most defensive operations but, normally, only Class V items are prepositioned. The location and amount of prepositioned ammunition must be carefully planned and each vehicle commander must be informed. All leaders, down to tank commanders and squad leaders, verify the locations of the sites during their reconnaissance and rehearsals. When prepositioning supplies, consider –

- Covered and protected positions are needed for prepositioned ammunition .
- Prepositioning frees cargo vehicles to bring more ammunition forward.
- The company does not have the manpower to guard preposition sites and, therefore, risks the capture or destruction of prepositioned ammunition.
- Prepositioned ammunition must be far enough away from vehicles and individual fighting positions so its destruction will not cause friendly vehicle damage or personnel casualties.

- Prepositioning fuel is difficult and requires additional equipment including a quantity of fuel transfer pumps, drums or 5-gallon cans, and covered sites separate from ammunition sites.

There are two main methods of prepositioning supplies:

Method 1: Class V is located in one place inside the assembly area or battle position (see Figure 7-3). Each vehicle pulls into the central area to upload ammunition and rations (if prepositioned). Prepositioned fuel tankers are set up at the rear of the position and refueling is done as in the service-station method of routine resupply.

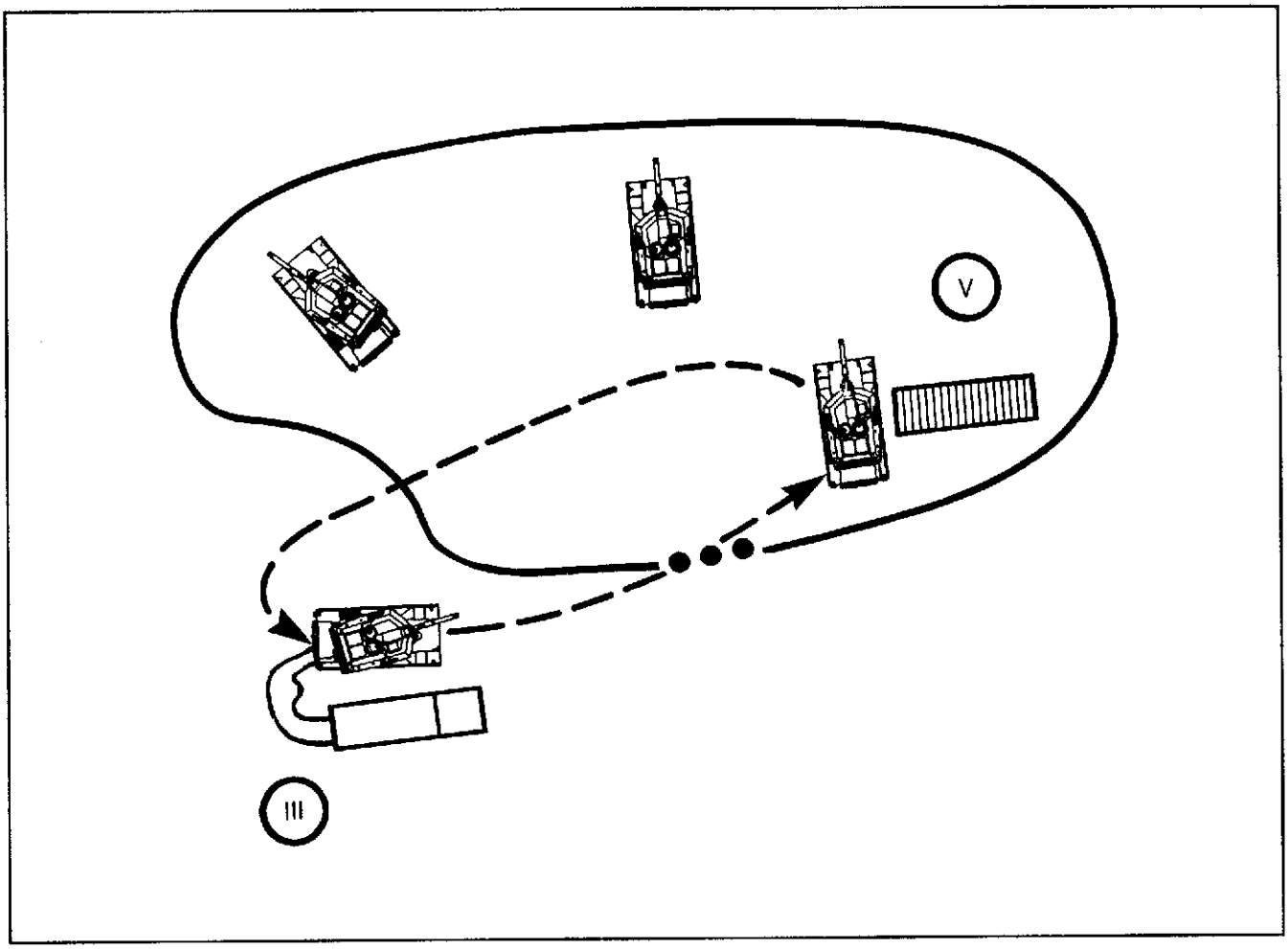

Figure 7-3. Prepositioning Supplies (Method 1).

Method 2: Class V supplies are prepositioned at each vehicle position. Class III tankers are prepositioned in one location for the entire platoon (see Figure 7-4). Class V supplies are placed on the ground in the vicinity of each vehicle position. When the platoon arrives, three vehicles move into the fighting positions and begin to rearm. The fourth vehicle stops at the Class III tanker, located to the

rear of the position, and refuels. When the refueling vehicle is full, it moves into its fighting position and begins to rearm while another vehicle moves to the refuel point.

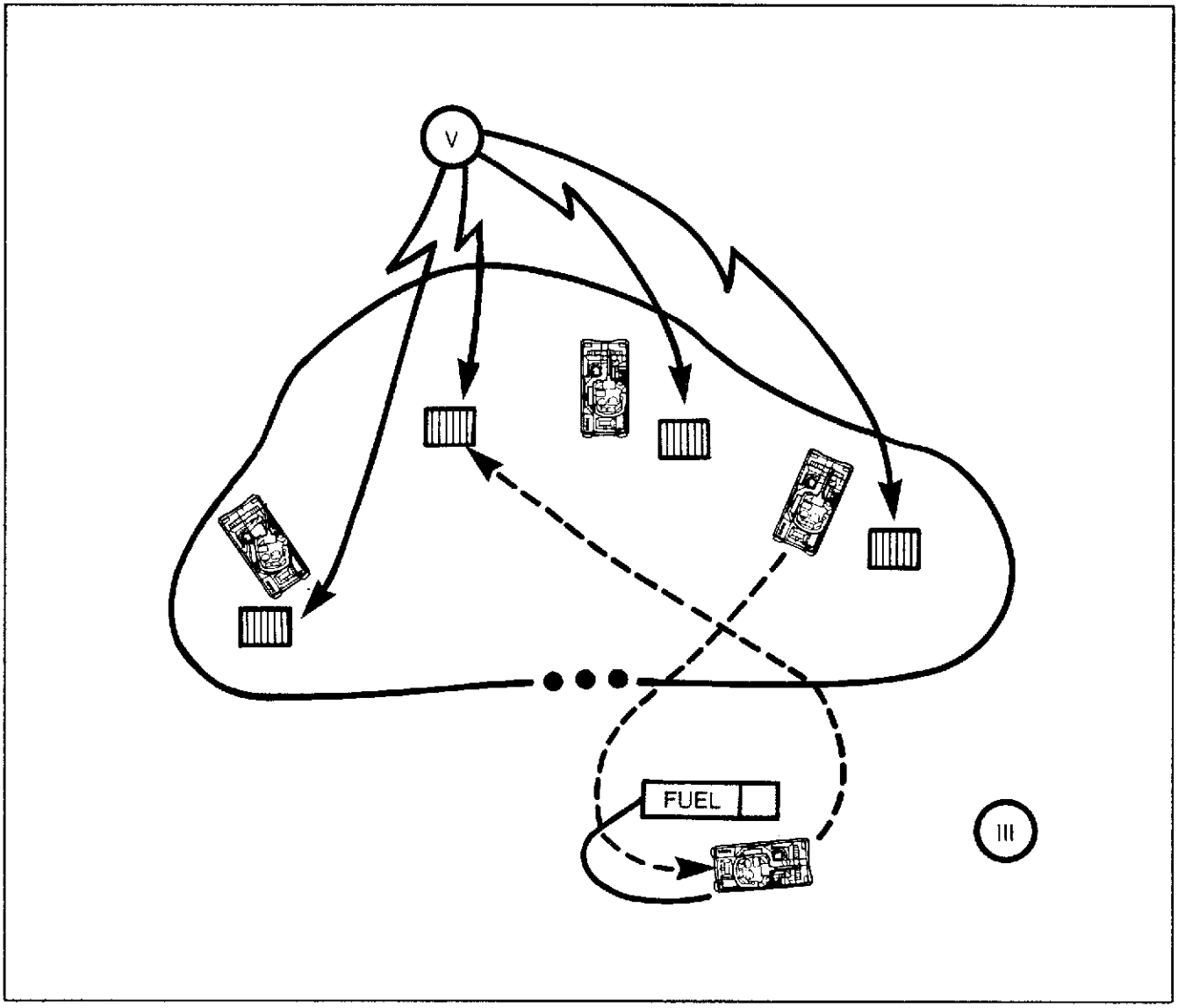

Figure 7-4. Prepositioning Supplies (Method 2).

Section IV. HEALTH SERVICES FUNCTION

The medical team attached to the company provides emergency medical aid and evacuation. The team provides first aid for minor injuries or illnesses and emergency medical treatment to stabilize seriously

wounded soldiers for transportation to the battalion aid station. The medics can advise and assist the company field sanitation teams in maintaining the health of the soldiers. Make sure the medics know where the battalion aid station is and can find their way there and back without assistance. (The first sergeant is responsible for the medics.)

When casualties occur, they are sustained by combat lifesavers and platoon medics until they can be moved to a covered position for transfer to the company medics. The first sergeant dispatches the armored ambulance to meet the vehicles with wounded. When there are casualties in each platoon, the platoons consolidate their wounded in one spot for treatment and evacuation. Based on the reported severity of wounds, the first sergeant requests air evacuation (most critically wounded) or assistance from the battalion aid station. The company aidmen will triage the wounded, stabilize them for transportation, and treat them for shock. If neither air evacuation nor assistance from the battalion aid station is available, the most serious casualties are transported to the aid station by the company's armored ambulance. The company commander must approve this because it deprives the company team of most of its medical support. For the less seriously wounded, the first sergeant arranges for evacuation to the battalion aid station using any available vehicles.

Weapons and military equipment needed immediately by the company team will not be evacuated with the wounded. The wounded keep their protective mask and any personal items.

Section V. ENEMY PRISONERS OF WAR

Transport EPW to the battalion task force EPW collection point as quickly as possible. The first sergeant is responsible for the security and transportation of EPW. The guards will remain with EPW until released by the battalion S1. The exact procedure for evacuation will be according to battalion SOP.

Section VI. MAINTENANCE

Maintenance is continuous; it starts with preventive maintenance by the operator and crew and continues through repairs by maintenance personnel. The personnel must be trained to accomplish the necessary tasks in all conditions. PMCS is a daily crew responsibility; DA Forms 2404 are collected during the daily resupply operation. Vehicle commanders submit DA Forms 2404 to the first sergeant or maintenance team chief prior to receiving rations. Maintenance work performed by the maintenance team is performed as far forward as possible.

Maintenance and recovery are initiated on site by the equipment operator and crew. Once the problem has been identified, the operator and crew start corrective action including –

- An initial status report to the platoon leader or platoon sergeant providing the conditions, location, and circumstances.
- An estimate of the situation to determine support requirements (self-recovery, field fixes, assistance from nearby vehicles, or assistance from battalion).

When it has been determined that the needed repair is beyond the crew's capability, the platoon notifies the first sergeant; the first sergeant dispatches the CMT. If additional assistance is required, the first sergeant or maintenance team chief requests it from the battalion maintenance officer (BMO) on the ALN.

As a general rule, the maintenance team should work on a vehicle for no more than two hours. If the vehicle cannot be repaired within that time, it is towed to an LRP, the MSR, or the UMCP, as necessary.

If a vehicle cannot be recovered or if it is damaged beyond repair, personal items, radios, crew-served weapons, ammunition, and other serviceable items and parts will be removed. The automotive and weapon systems will be rendered nonfunctional to preclude enemy use. Destruction or disabling will be accomplished only on order from the commander.

The maintenance team normally travels at the rear of a company column during a road march (the exact location is according to the SOP). If a vehicle becomes disabled, the crew moves it as far off the road as possible and dismounts a road guide to assist the passage of other vehicles. If the crew cannot make repairs, they wait for assistance from the CMT.

This appendix implements QSTAG 506 and STANAGs 2014 and 2129.

APPENDIX A

COMBAT ORDERS

Note: The following information on combat orders describes the minimum information needed in an OPORD. This information is not all inclusive. Depending on the mission and the situation, information may be added or deleted.

It is important that company team commanders understand the task force commander's concept of the operation and the task force OPORD, and relay it to the soldiers in a logical, understandable manner. This is done through combat orders.

A combat order transmits future missions to soldiers. At company team level, these combat orders will normally be given orally because of the lack of time available. There are three types of combat orders a company team commander may use:

- Warning order.
- OPORD.
- FRAGO.

Section I. WARNING ORDERS

A warning order is used to notify the company team of an upcoming action. It may be an oral or written message. It is issued immediately after a mission from battalion is received and analyzed. This will allow the soldiers time to prepare themselves and their equipment for combat. Even though the order is brief, it must contain as much of the following as possible:

- Brief description of the situation.
- Mission.
- Time of operation.

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SECTION I.	WARNING ORDERS	A-1
II.	OPERATION ORDERS	A-3
III.	FRAGMENTARY ORDERS	A-4

- Earliest time of movement.
- Any specific instructions (attachments or detachments).
- Time and location where the OPORD will be delivered.

There is no prescribed format for the warning order, however, the following is a suggested format:

Addressees: Identify to whom the order pertains.

Warning Order: The order should begin with the words "WARNING ORDER" to make sure everyone understands what it is.

Nature and Time of Operation: Use enough detail to allow subordinates to set priorities and begin preparing. State the mission, if known.

Earliest Time of Movement: If possible, state the earliest time of movement to help the company personnel set priorities by time sequence.

Special Instructions: State any change in task organization, MOPP level, coordinating instructions, or any other necessary instructions not given elsewhere in the order.

Time and Place: State when the OPORD will be given.

Acknowledgment: Request acknowledgment from subordinates to ensure they receive and understand the order.

Upon receiving the warning order, platoon leaders should prepare their own warning order to issue to their subordinates.

WARNING ORDER:

Addresses: XO, plt ldrs, FSO, 1SG.

Time of Operation: NLT 301800Z Oct 19—.

Nature of Operation: Prepare to defend BP 52. Orders Group B with quartering party to move along Route Bear at 0100 to BP 52. XO to move remainder of company along Route Bear IAW task force movement plan.

Earliest Time of Movement: SP 300500Z Oct 19—.

Time and Place OPORD is to be Issued: BP 52 (ES625913), at 300300Z Oct 19—.

Attachments and Detachments: None.

Acknowledgement:

Figure A-1. Sample Warning Order.

Section II. OPERATION ORDERS

Company team commanders issue OPORDs to subordinates to provide them with the essential information required to conduct the operation and to convey the company commander's intent. The OPORD is issued orally at company level and follows the five-paragraph field order format. This format helps ensure all required information is presented in a logical manner. The OPORD should be issued using an overlay, execution matrix, and sketch map or terrain model whenever possible.

Task Organization:

I. SITUATION:

a. Enemy Forces: Identify disposition and strength of the enemy, weather, and terrain vital to the mission. Include as much of the following as possible:

(1) Location of enemy forces.

(2) Strength.

(3) Type of equipment.

(4) Capabilities.

(5) Probable course(s) of action (including fire sacks).

(6) Weather and terrain analysis.

b. Friendly Forces: As a minimum, include:

(1) Mission of next higher commander.

(2) Intent of next higher commander.

(3) Scheme of maneuver of next higher commander.

(4) Missions issued by the higher commander and essential to the operation (counterattack force).

(a) Mission of unit on immediate left.

(b) Mission of unit on immediate right.

(c) Missions of any other units.

(5) Supporting or reinforcing units available.

c. Attachments and Detachments: List all company team attachments and detachments and the time they become effective (unless this information was given in the task-organization paragraph).

2. MISSION: State clearly and concisely the essential tasks (who, what, when, where, and why).

Figure A-2. Format for Five-Paragraph Field Order.

3. EXECUTION:

a. Intent: Explain what you are trying to do (should be clear and concise—not more than three or four sentences).

b. Concept of Operation:

(1) Maneuver. Describe how you visualize the battle being fought (must be a clear, concise statement of the scheme of maneuver leaving subordinates a framework in which to operate without further guidance if necessary).

(2) Fires. State the scheme of fires to support the overall concept of the operation. Some items that may appear in this subparagraph are—

(a) Priority of fires.

(b) Priority targets.

(c) Indirect-fire target engagement priorities.

(d) Specific responsibilities for executing designated targets.

(e) Indirect-fire restrictions.

(f) Illumination.

(g) Preparatory fires (time and duration).

(h) Close air support.

(i) Employment of nuclear and chemical fires.

(j) Final protective fires (FPF).

(3) Intelligence and electronic warfare. Include information on the use of patrols and observation posts (OP).

(4) Obstacles, mines, and fortifications. Include information on engineer efforts to support overall scheme of maneuver.

(a) Priority of support (main effort).

(b) Priority of effort (mobility, countermobility, and survivability).

(c) Work effort of organic assets.

c. Specific Instructions and Subunit Missions: List all maneuver units under your command (even if they have no additional specific tasks).

d. Tasks of Combat Support Units: Describe the specific tasks that must be accomplished by CS units and are not specified or implied elsewhere. (CS units are listed in the same order in which they appear in the task-organization paragraph.)

e. Coordinating Instructions: List information or tactical instructions that pertain to two or more elements. (This is the last subparagraph of paragraph 3.) Items that may appear are—

Figure A-2. (Continued).

(1) Critical times (SP, LD, checkpoints).

(2) Formations to be used.

(3) Order of march.

(4) Route of march.

(5) Alternate routes.

(6) Control measures (passage lanes, passage points, contact points, identification).

(7) MOPP level.

(8) Actions on contact.

(9) Actions at danger areas.

(10) Rehearsal times and place.

(11) Radiation exposure status (RES).

(12) Inspection times and place.

(13) Rules of engagement.

(14) Special reports or information required.

(15) Status of air defense warning and weapon control.

4. SERVICE SUPPORT:

a. General: Provide instructions on the location and general movement of the company team trains.

b. Material and Services:

(1) Supply. Address the specific classes of supply as required (all supply information not SOP).

(a) Priority of resupply.

(b) Resupply points.

(c) Rations to be used.

(d) Location of task force combat and field trains.

(2) Transportation. Include information on the location of supply routes, LRPs, and priorities on the routes.

(3) Services. Provide instructions for evacuation of KIA, location of water points, and other services.

(4) Maintenance. Provide instructions on recovery and evacuation of battle-damaged vehicles, maintenance priorities and procedures, and location of the task force UMCP.

Figure A-2. (Continued).

c. Medical Evacuation and Hospitalization: State the location of the task force aid station and any special procedures for evacuation of WIA and wounded EPW.

d. Personnel: Provide instructions on the handling of EPW, replacements, and priority of manning replacements.

e. Civil-Military Cooperation: Provide information on civil affairs (curfew, host-nation support) and psychological operations in support of civil affairs.

f. Miscellaneous: State any information or instructions not previously covered.

5. COMMAND AND SIGNAL:

a. Command: Include any special instructions not covered by SOP, including:

(1) Location of commander.

(2) Location of XO.

(3) Location of task force commander.

(4) Location of task force main CP.

(5) Succession of command.

b. Signal: State all communication instructions not in the SOP. Items covered include:

(1) SOI index and edition.

(2) Listening-silence instructions.

(3) Challenge and password.

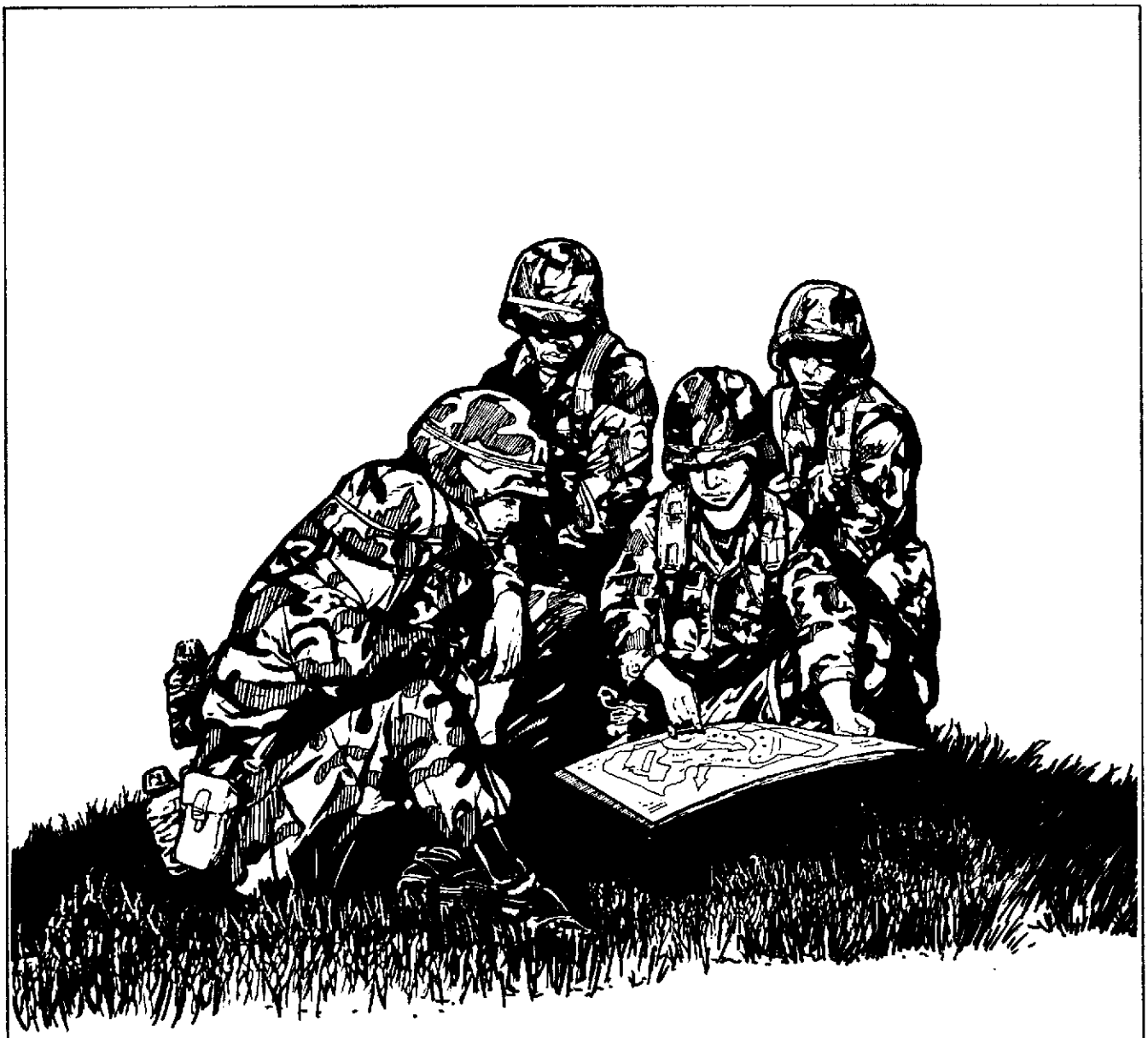
(4) Antijamming frequency.

(5) Antijamming code words.

(6) Special signals (star clusters, flags).

Figure A-2. (Continued).

Figure A-3 is a sample of a company commander's oral operations order for the defense of BP 52 as part of TF 2-10's defense in sector. Company B, 2-10 Armor is composed of a tank company base with three tank platoons (M1). From a vantage point located at platoon BP 52-2 (6291 grid square), the company commander issued this order to his orders group:



"Okay men, we're located here at BP 52-2, grid ES623913, facing north."

Figure A-3. Company Team Sample OPORD (Oral Order).

Task Organization:

1. SITUATION:

a. Enemy Forces:

(1) Recent activities.

(a) The TF is facing elements of the 73d MRD, consisting of 181st MRR, 199th MRR and the 129th MRR.

(b) All three regiments are equipped with T-64 and T-72 tanks; BMP or BTR; and normal support assets (arty, ADA, engr, AH, AT).

(c) Enemy has been attacking for three days and will use airmobile and AHs in TF rear, especially vic of Sinking Creek Hill (ES5985) and Garfield (ES5681).

(d) Enemy has nuclear and chemical capability with FROG or MRL.

(2) Enemy disposition and composition in TF zone. 85% strength; morale good.

(3) Most probable course of action. Enemy will attack in our TF sector with one regiment. We can anticipate seeing one MRB followed by a second MRB.

(4) Weather and terrain. Temperature is 78 degrees, BMNT 0420, sunrise 0435, sunset 1850, EENT 1905. Heavy rain recently has reduced trafficability of roads. No rain or fog predicted for the next two days.

b. Friendly Forces:

(1) Higher. TF 2-10 will def in sector from ES57968 to ES656921, 301000Z Oct 19–, assist passage of CF units and accept battle handover and o/o counterattack to defeat the enemy forward of PL Spider. TF commander wants to strip away enemy recon to confuse and blind the enemy as to our fighting positions. The enemy will then be surprised in our EAs. The critical event for the TF is defeat of enemy attack on EA Fist.

(2) Left. Tm D or on west (left flank) def from BP 50, and o/o def from BPs 54 and 57. Tm A/2-95 also to our west def BP 51 and o/o def from BP 53 and 67.

(3) Right. Co C/2-95 (-) on our east (right flank) def from BP 55 and o/o def from BPs 56 and 61.

(4) Forward. 1-201 ACR conducts CF operations to our front; they will withdraw to an AA vic Garfield (ES5681) to refit and rearm.

(5) Rear. TF 2-95 Mech (-) reinforces 1/201 ACR. After withdrawal of CF, def BP 31 and becomes the brigade reserve. O/o they attack enemy airmobile forces landing in the brigade rear areas.

(6) Scouts. Our scout platoon is screening between the TF and the CF and will occupy contact points 1 and 2. When they withdraw, they will establish OPs 3 and 4.

Figure A-3. (Continued).

(7) Mortars. Bn 4.2" mortar platoon is in GS to our TF. They are loc in ES612943 and will displace to subsequent positions o/o.

(8) Engineers.

(9) ADA.

(10) CAS. TF has CAS on call.

2. MISSION: Co B def BP 52 (ES627914) 301800Z Oct 19—, assist passage of the CF and accept battle handover along PL Snake. O/o, def BP 58 (ES623877), BP 62 (ES645870), and counterattack to destroy the enemy in EA Fist.

3. EXECUTION:

a. Intent: I want to destroy any enemy recon vehicles in EA Hammer. The enemy will probably deploy his lead MRB to push through EA Hammer and enter EA Anvil. I want to destroy at least two MRCs in Anvil. However, if the enemy gets eight or more vehicles past TRPs 306-301, we will displace to BP 58 and continue the fight.

b. Concept of Operation:

(1) Maneuver. We will initially def BP 52 with 1st plt at 52-1, 2d plt at 52-2, and 3d plt at 52-3—all oriented on EA Anvil. The scouts will coordinate and assist passage of the CF and Mech Tm will guide the CF down Lane Red. When the scouts and the CF are clear, we will engage the enemy. The trigger point is when enemy lead vehicles reach TRP 300. 1st and 2d plts engage tanks, mobility-enhancing equipment, and BMPs. 3d plt hits C3 BMPs and ADA. We will destroy the two lead MRCs from this position. If the enemy gets eight vehicles past TRPs 306-301 (breakpoint), we will displace to BP 58. Sequence of movement is 3d plt, 2d plt, and 1st plt in that order. We will conduct internal overwatch. For specific locations and orientations, look at the execution matrix. At BP, 58 we counterattack by fire into the eastern half of EA Fist, thus supporting Mech Tm's counterattack by fire and maneuver. O/o, the TF will counterattack IAW bde counterattack plans.

(2) Fires. Scouts will have initial priority of fires, o/o Co B, Tm A, Tm D, and Co C/2-95(-), respectively. Within the company, priority is to 3d plt, 1st plt, and 2d plt. We have no priority targets. Indirect fires will be used to slow the enemy initially, then assist destruction during the counterattack. Smoke will be used to assist moves to subsequent positions. There are no restrictions at this time. All TRPs are recorded as artillery targets.

c. 1st Plt: Occupy BP 52 (1). Orient on TRP 306 (BB 4034). Prepare BP 58 (1). Orient on TRP 354 (BB 4038). Recon BP 62 (1).

d. 2d Plt: Occupy BP 52 (2). Orient on TRP 300 (BB 4040). Prepare BP 58 (2). Orient on TRP 359 (BB 4039). Recon BP 62 (2).

e. 3d Plt: Occupy BP 52 (3). Orient on TRP 329 (BB 4028). Prepare BP 58 (3). Orient on TRP 359 (BB 4027). Recon BP 62 (3).

Figure A-3. (Continued).

f. Air Defense: AD warning status: Yellow. Weapons status: Tight.

g. Obstacles, Mines, Fortifications: Platoons authorized to emplace hasty protective minefields in front and to flanks of platoon BPs. Mines and obstacles must be marked, recorded, and guarded if they cut roads or trails.

h. Coordinating Instructions:

(1) Recon routes, report to me NLT 1400 tomorrow, here.

(2) XO move with 2d plt.

(3) 1SG loc with co cbt tns initially ES633902; move to BP 63 o/o.

(4) FSO loc with me.

(5) MOPP level. MOPP 1 in effect until 300415Z Oct 19—, then MOPP 2. All sleeping personnel in MOPP 2. Monitor at all times. Chemical paper mounted on vehicles.

(6) OEG rate. 80 cGy.

(7) PIR—report any.

(a) 2d echelon elements.

(b) Attempts by enemy to break contact.

(c) Enemy MOPP status.

(8) Rehearsal times and locations. 1400 hours tomorrow, here.

4. SERVICE SUPPORT:

a. General:

(1) Co cbt tns loc on BP 58 (ES633902).

(2) Co fld tns loc with TF fld tns.

(3) TF cbt and fld tns loc ES588874, o/o ES601840; fld tns ES645713 w/BSA, o/o move with BSA.

b. Material and Services:

(1) Class I. Three days MRE on all vehicles.

(2) Class II. Top off before departure from AA.

(3) Class V. BP 58 prestocked with 20 APDS NLT 1600 hours tomorrow.

(4) Evac KIA.

(5) Maintenance. Loc of UMCP ES593868.

Figure A-3. (Continued).

c. Medical Evacuation and Hospital:

(1) Evac WIA per SOP.

(2) TF sqdn aid station with TF cbt tns.

d. Personnel: Per SOP.

e. Civil-Military Cooperation: Curfew: 2200 to 0500 daily. Treat captured violators as EPW.

f. Miscellaneous: Permission granted to destroy all classes (except Class VIII) of supplies to prevent capture.

5. COMMAND AND SIGNAL:

a. Command:

(1) Co cdr loc with 1st Plt.

(2) XO loc with 2d Plt.

(3) TF TOC loc at ES616893, o/o ES903857.

(4) TF cdr loc with co D.

(5) Succession of command per SOP.

b. Signal:

(1) SOI index: 2-68 Edition A.

(2) Challenge and password: MILK TOAST.

(3) Listening silence: In effect until enemy contact.

(4) Emergency signals:

(a) Emergency signals to evacuate BPs are–

1st plt: 2 green clusters.

2d plt: 1 green, 1 red clusters.

3d plt: 2 red clusters.

If you want to move: 2 white parachutes.

Approval: 1 white cluster.

(b) Company signal to request move is one red star cluster. TF approval is one green cluster.

Time now is 0345.

What are your questions?

I will be around to your positions at_____for backbriefs.

Figure A-3. (Continued).

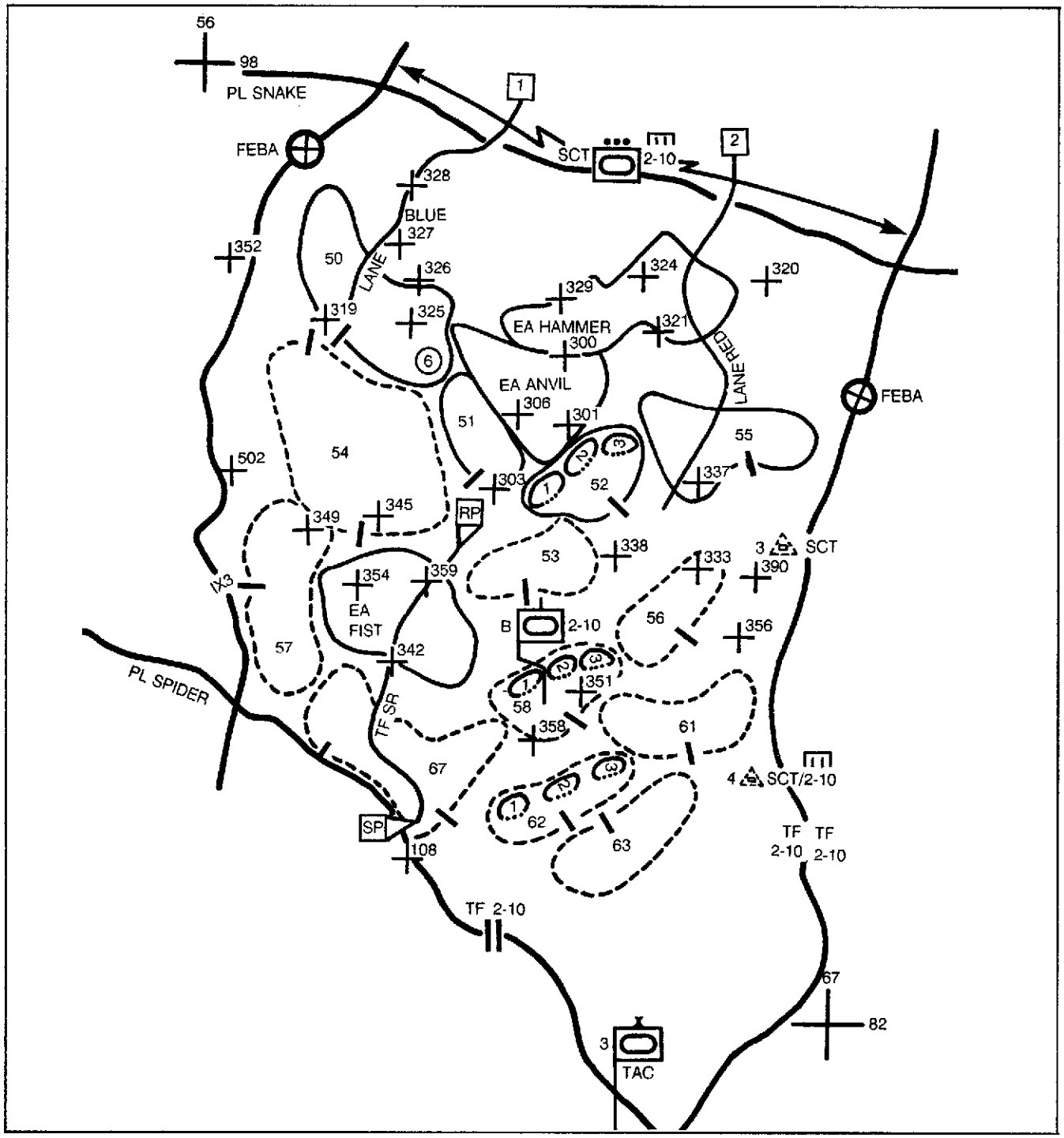


Figure A-4. Sample OPORD Overlay.

SECRET — CLASSIFICATION

300345Z Oct 19__ — DATE/TIME

TASK ORGANIZATION (changes only): NONE

MISSION: CoB defends BP 52 (ES627914) 301800Z Oct, 19__, assists passage of CF and accepts battle hand over along PL SNAKE. On order defend BP 58 (ES623877), BP 62 (ES645870) and counter attacks to destroy the enemy.

COMMANDER'S INTENT: Destroy any enemy Recon vehicles in EA HAMMER. We will then destroy two MRC's in EA ANVIL. If the enemy gets 8 vehicles past TRPs 306-301 we will displace to BP 58

UNITS / EVENT	CO TM	FSO ENGR	1ST PLT	2D PLT	3D PLT	OTHER ATTACHED
Occupy Position / Orient	BP 52 / EA ANVIL	W/Co Cdr	52-1 Trp 306 / EA ANVIL	52-2 Trp 300 / EA ANVIL	52-3 Trp 329 / EA ANVIL	
Priority Targets / Order of movem't			Tank Engr BMPs / LAST	Tank Engr BMPs / SECOND	C² BMPs ADA / LEAD	
Prepare Position / Orient	BP 58 / EA FIST		58-1 Trp 354 / EA FIST	58-2 Trp 359 / EA FIST	58-3 Trp 359 / EA FIST	
Recon	BP 62		62-1	62-2	62-3	
CALL SIGN / FREQ	C 71 / 54.40	C 54	T 91 / 40.40	M 91 / 40.00	P 91 / 38.55	

MOPP LEVEL	CDR WITH	FA CALL SIGN	MORTAR CALL SIGN	CO TRAINS LOC
I until 300415 then II	1st Plt	T7Q43	D5H43	ES 633902 Then to BP 63
RES	**ADA STATUS**	**FREQ**	**FREQ**	
80c Gg	Yellow TIGHT	33.00	46.25	

EMERGENCY SIGNALS
EVAC BP
1 Plt - 2 Green cluster
2 Plt - 1 Green, 1 Red cluster
3 Plt - 2 Red cluster
Request to move - 2 white Parachutes
Approval - 1 White cluster
Co request to move - 1 Red star
TF Approval - 1 Green cluster

OTHER INFORMATION:
(code words) MILK TOAST
(priority for resupply): - PER SOP - 3 day MRE

Figure A-5. Sample Execution Matrix.

Section III. FRAGMENTARY ORDERS

FRAGOs contain missions of immediate concern to the subordinate elements and are used to adjust to rapidly changing battlefield conditions. They are normally issued orally at the company team level. Use FRAGOs when the time does not permit a complete OPORD, or when a change to an existing OPORD is necessary. There is no specific format for the FRAGO. To ensure understanding, use the five-paragraph field order format. Only the information required for the subordinates to accomplish their mission is given.

FRAGOs should be timely, brief, and concise and relay the commander's intent and concept.

This appendix implements STANAG 2041.

APPENDIX B

ROAD MARCHES AND ASSEMBLY AREAS

When not in enemy contact, the company team may have to move long distances to position itself for future operations or to move from garrison to training areas. These movements, called road marches, are planned at battalion and company levels.

An assembly area (initial assembly area before movement begins or the forward assembly area following the move) is a site at which the unit gathers to prepare for future operations. Preparations include receiving and issuing orders, servicing and repairing vehicles, receiving and issuing supplies, and taking care of personnel.

Section I. ROAD MARCHES

The company team often conducts road marches to move long distances. Road marches require extensive planning. The success of a road march depends on a good unit SOP and thorough planning. (FC 71-10 contains detailed information on movement planning.) There are three primary road march techniques:

- *Open column* is normally used for daylight marches. It can be used at night with blackout lights or thermal-vision equipment. The distance between vehicles varies, depending on road conditions and weather, but is normally 50 to 100 meters.
- *Close column* is normally used for marches in darkness or limited visibility. The distance between vehicles is approximately 25 meters. Vehicle drivers should be able to see the blackout markers of the vehicles in front of them.
- *Infiltration* is the movement of small, individual units or vehicles at irregular intervals. This technique reduces traffic density and prevents undue massing of vehicles. Infiltration provides the best passive defense against enemy observation. It can also be used when time and road space are available, and security, deception, and dispersion are desired. The use of FM radios should be minimized.

PLANNING CONSIDERATIONS

Certain tasks are standard in any road march and should be in the SOP. These tasks include:

- List all vehicles by march serial and bumper number.

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- Designate a marshalling or staging area to organize the column and conduct final inspections and briefings.
- Determine the enemy situation and probability of air or ground attack. Establish security measures (air guards, reaction force).
- Lay out the route to include SP, checkpoint(s), and RP. Include critical areas, defiles, choke points, rest and maintenance stops, and other areas of danger or potential difficulty.
- Organize, brief, and dispatch the quartering or reconnaissance party. Have it drop off guides or mark the route for the main body.
- Describe the destination and actions to be taken at the RP and the new location.
- Set the march speed, movement formation, vehicle and serial interval, catch up speed, lighting, and times of critical events (SP, pass key road junction).
- Plan contingency actions and indirect-fire support. Establish reaction drills when appropriate (such as ground or air attack, vehicle breakdown, straggling or lost vehicles, and accidents).
- Coordinate for service support (refueling, meals and water, vehicle recovery, local police assistance, and MEDEVAC).
- If the column is a composite, establish a chain of command. Designate and disseminate communications (radio frequency, vehicle markings, and special hand signals).
- Pick your place in the column as the convoy commander. Designate the best map reader to be in the lead vehicle.
- Brief everyone in the unit as thoroughly as possible.

QUARTERING PARTY

If conducting an unassisted, independent move, organize a reconnaissance or quartering party. A quartering party (sometimes called an advance party) is sent to the next assembly area before the company team leaves its current position. A quartering party is normally composed of an NCO, a security element (if the tactical situation requires one), and one or two representatives from each platoon. The NCO will normally be the first sergeant or supply sergeant. The security element should consist of two combat vehicles and come from the same platoon. Each platoon should have an NCO and a soldier representative.

The quartering party reconnoiters new areas and guides the march element into these areas. The quartering party also performs a detailed route reconnaissance, when possible. The commander of the quartering party knows the route, order of march, and the estimated time of arrival of each element in the main body.

The reconnaissance or quartering party travels ahead of the main body and moves by infiltration. They make sure the area is clear of enemy forces and contamination. The advance party will normally depart one to two hours ahead of the main element. Specific duties of a quartering party include:

- Reconnoiter the area for enemy forces, condition of the route, adjacent terrain, and NBC contamination. If the area is unsatisfactory, contact the company commander and request relocation.
- Organize the area based on the commander's guidance. Designate platoon areas, command post, and trains areas.

- Improve and mark entrances, exits, and internal routes.
- Mark and remove obstacles within its capabilities.
- Mark vehicle locations and guide vehicles into locations.

COLUMN INTERVAL

When planning the interval (or density), consider the size of the column and time required for the unit to move. When determining the length of the company in either a closed or open column use the following formula:

A = Number of vehicles
B = Distance between vehicles (vehicle + interval)
D = Length of column (distance between first and last vehicles)
(A X B) - B = D
A = 14 Vehicles
B = 100 Meters
D = (14 X 100) - 100 = 1,400 - 100 = 1,300 Meters

The company team in an open column will extend about 1,300 meters.

CRITICAL POINTS

Critical points are points where interference with movement may occur, or where timing might be a critical factor (road junction, defile, or sharp curve in the road). (A route reconnaissance report or a map study will help determine critical points, unless radio listening silence is in effect.) SP, RP, and all checkpoints are critical points.

SPs provide a common point from which to start movement. (If the unit is moving on more than one route, each route must have an SP.) The SP should be an easily recognizable point on the ground. Never use a defile, steep hill, or sharp curve as an SP. The SP should be far enough from the assembly area to allow the platoons to acquire the proper interval and march speed before passing the SP. Set the times for each platoon to reach and pass the SP. Every element should pass the SP on time so as not to halt the movement of follow-on forces.

RPs provide a common point along the route from which all elements revert to the control of the parent unit. Once the company team passes the RP, it quickly moves away from the area so as not to block follow-on units. The RP should be an easily recognizable point on the map and ground. Avoid using hills, defiles, and sharp curves. Pass through an RP without stopping or slowing down.

Checkpoints are predetermined points used to control the movement of the unit. The platoons reporting when they reach checkpoints helps the commander determine the locations of the platoons. Checkpoints will not be used as reference points for reporting enemy locations. Platoon leaders will normally notify the commander when their element hits a checkpoint; however, the commander may be required to notify battalion when the company team reaches and passes a checkpoint.

FUEL CONSUMPTION

The fuel consumption of the company team must be considered. Use the following list for planning fuel consumption:

Vehicle	Per Kilometer
M1	3.50 gallons
M2 or M3	.58 gallon
M60	.77 gallon
M113	.25 gallon
M88	.42 gallon

HALTS

While on a road march, the company team may conduct three types of halts:

- *Scheduled halts* are planned halts along the route of march. Maintenance and crew rest stops are scheduled halts. When conducting a scheduled halt, vehicles pull off the side of the road and maintain vehicle dispersion. Local security is maintained while crews perform duties. When planning maintenance halts and crew rest stops, include room for vehicles (for possible refuel operations), drainage, cover, and concealment. The task force SOP may determine the frequency of maintenance halts.

- *Unscheduled halts* may have to be conducted if obstacles or contaminated areas are encountered. If possible, move off the road for dispersion of vehicles and additional cover and concealment. If it is impossible to get off the road, a herringbone formation is used. Each platoon should send a runner to the commander's vehicle to determine the reason for the stop. Local security is maintained until movement is continued.

- *Disabled vehicle halts* can make a march column subject to enemy ground and air attack. Immediately move disabled vehicles off the road to allow other vehicles to pass. The crew of the disabled vehicle establishes local security and attempts to repair the vehicle. When repaired, the vehicle rejoins the column. If the vehicle cannot be repaired, report the location and cause of the failure on the ALN. If radio silence is imposed, the unit trail party will pick up disabled vehicles. The trail party usually consists of maintenance personnel and recovery vehicles.

STRIP MAPS

A strip map can be used to assist in navigation. The map must include SP, RP, checkpoints, critical points, and the distance between these points. Detailed blow-up sketches should be included at rest halt areas and other places where confusion or disorganization is likely. A strip map is normally included as an annex to the movement order and a copy should be provided to all vehicle commanders. (An example strip map is shown in Figure B-1.)

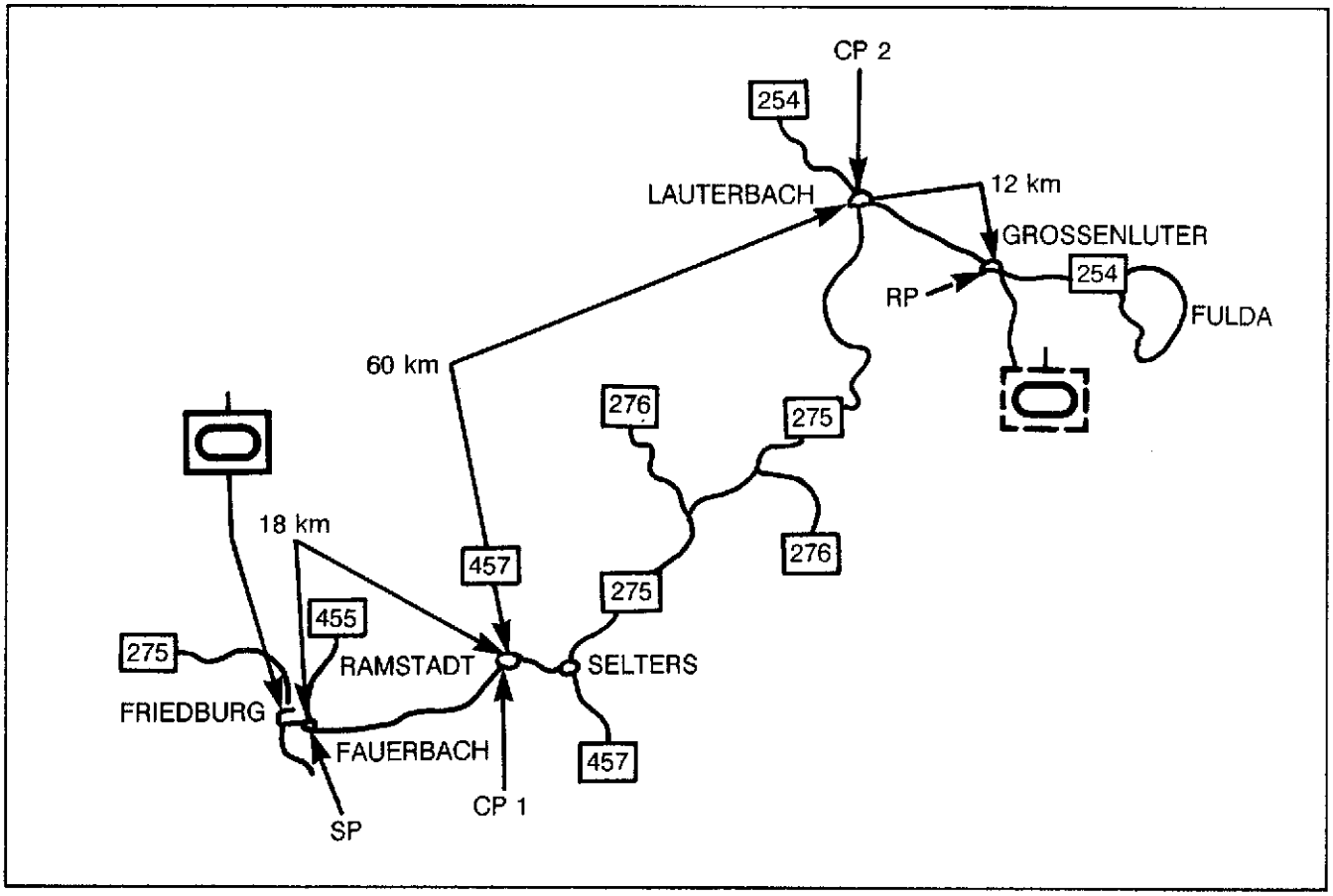

Figure B-1. Strip Map.

ACTIONS ON CONTACT DURING ROAD MARCHES.

Air Defense Drill

Passive or active air defense measures that will be used during road marches must be indicated. When on the move the unit should—

- Maintain vehicle interval.
- Stagger vehicles to avoid a linear pattern (if not road bound).
- Cover reflective surfaces.
- Post air guards.
- Maintain 360-degree observation.

If attacked while on the move—

- Move from the aircraft axis of attack and occupy covered and concealed positions. If none are available or if the aircraft has identified your location and continues to attack, move and take evasive action.
- Engage aircraft with all available weapons. Gunners should use a fixed lead to engage aircraft. If a threat high-performance aircraft passes the unit at a low altitude, assume that another will follow to attack the unit at a higher altitude, followed by the original which will have circled.
- Report the results of contact to higher headquarters and continue to move.

Artillery Evasion Drill

If the unit receives artillery fire while on the march—

- Button up and continue to move.
- Report to higher headquarters.
- If required, conduct an unscheduled halt to check for presence of chemical agents, render medical assistance, and evacuate any damaged vehicles.

Ground Defense Drill

Even in rear areas, the company may be attacked by enemy special operations forces or guerrillas. If you are attacked—

- Return fire and continue to move.
- Submit spot reports.
- Move rapidly to covered and concealed positions while continuing to engage.
- Use smoke to cover movement.
- Request indirect fires.
- Update the spot report as information becomes available.

Section II. ASSEMBLY AREAS

An assembly area is used to prepare for future operations. While not a battle position, it should be located on easily defensible terrain, and should be planned like a defensive position. The company team may occupy part of a task force assembly area. Normally, the company team will be assigned a separate area. If occupying as part of a task force (see Figure B-2), the task force commander will assign the sector of responsibility. If alone (see Figure B-3), the company team must establish 360-degree security. A well-planned assembly area will have concealment, good routes in and out, security from ground and air attack and observation, and good drainage. While in an assembly area—

- Issue orders.
- Organize for the mission (include cross-attachments).
- Maintain organic equipment (weapons, vehicles, personnel).

- Prepare for precombat inspection.
- Resupply, refuel, and rearm.
- Rehearse the upcoming operation.
- Verify weapon system status (boresight, perform computer tests, test fire, update muzzle reference system [MRS]).
- Eat and rest.

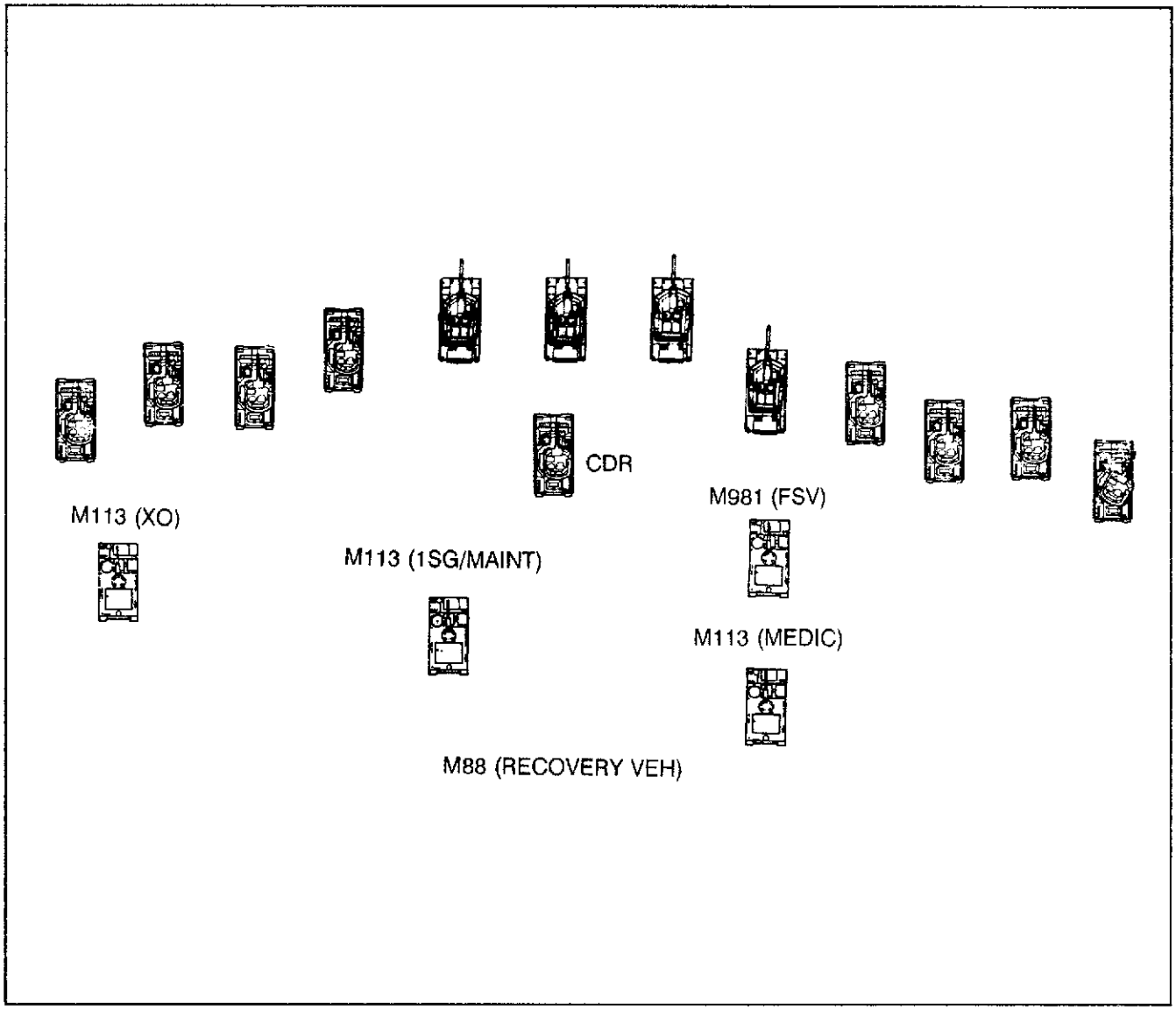

Figure B-2. Assembly Area (Part of Task Force).

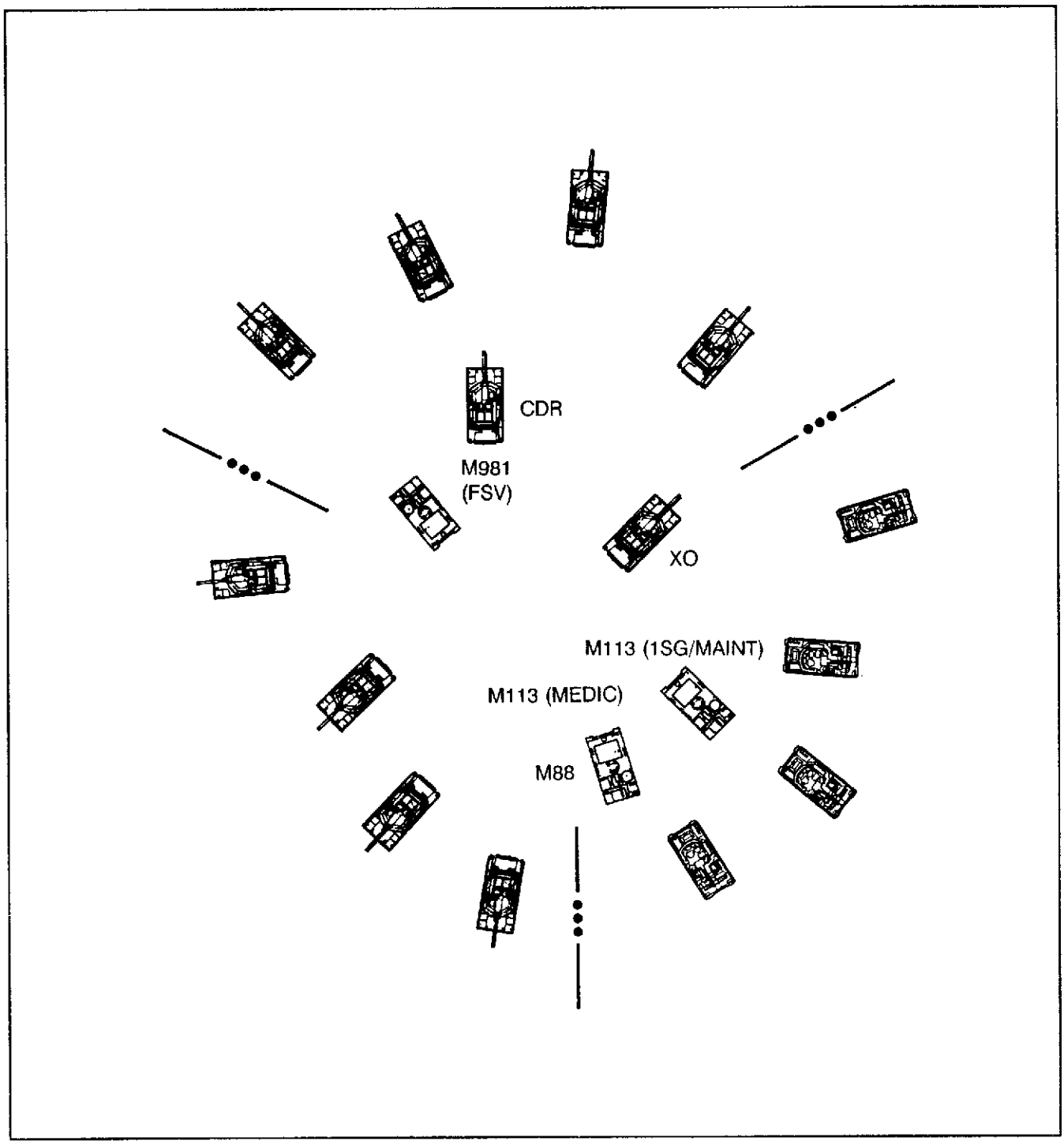

Figure B-3. Company Team Assembly Area.

The following list may help organize the assembly area:

- Move vehicles from RP to assembly area without stopping.
- Guard and cover entrances and exits with weapon systems.
- Cover avenues of approach with weapon systems.
- Achieve mutual support (platoons and vehicles).
- Establish a fire plan (company and platoons).
- Coordinate with flank units so fires are interlocking.
- Prepare camouflage (ground and air).
- Send platoon status reports to company.
- Send company team status report to higher commander.
- Rearm, resupply, and refuel.
- Make maintenance and equipment corrections.
- Establish hot loop for communications.
- Issue orders.
- Establish dismount points.
- Enforce noise and light discipline.
- Organize and conduct security patrols and OPs.
- If hot loop cannot be established, maintain radio watch.
- Secure trains area in the company position.
- Establish command post.
- Deploy chemical detection equipment.
- Reconnoiter exit routes in case of artillery or ground attack.
- Designate rally point.
- Designate possible alternate assembly area.
- Disseminate challenge and password.

APPENDIX C

OBSTACLES

Obstacles can be extensively used by both friendly and enemy forces in combat. Existing obstacles are important combat multipliers and cannot be overlooked. In the defense, obstacles can be used to enhance the effects of terrain and force the attacker to do what the defender wants (stop, slow, or be canalized). In the offense, the attacker must be skilled at bypassing, reducing, and breaching obstacles in minimal time with minimal forces. The company team must be equally able to employ, emplace, and breach obstacles on the modern battlefield.

Obstacles are important potential sources of intelligence. They show where the defender has planned his defensive effort and indicate the approximate position of direct-fire weapons needed to cover the obstacle and kill zone in front of it. Obstacles also indicate possible mortar and artillery positions, in range, to cover the obstacles. Obstacles also give some indication as to the time and engineer effort available to the defender to prepare the defense.

Section I. TYPES OF OBSTACLES

The variety of obstacles on the modern battlefield are categorized as either existing or reinforcing obstacles. Effective existing antiarmor obstacles range from ravines, gullies, or ditches over 3 meters wide, to sharp rises and steps over 1.5 meters high, to built-up areas. Effective existing obstacles also include mountains and slopes over 60 percent (30 degrees); rivers, streams, and canals over 150 meters wide and 1.5 meters deep; swamps and marshes over 1 meter deep; tree stumps 18 inches high; and forests or jungles with trees 8 inches or more in diameter and less than 4 meters of space between them on a slope. (FM 5-101 and FM 5-102 contain additional information on mobility and countermobility operations.)

MINEFIELD

The minefield is the most common reinforcing obstacle the company team will encounter. A minefield is easier and quicker to emplace than other obstacles and very effective in destroying vehicles; this makes a minefield the highest payoff obstacle. The minefield may be delivered by air, artillery, mechanical means (FASCAM), or they may be hand-emplaced, or machine-emplaced or used in conjunction with other obstacles. The minefield may be tactical, hasty protective, deliberate protective, point, interdiction, or phony. Regardless of the type, a minefield will be covered by fire to enhance its effectiveness. Minefields delay and canalize an attacker's movement, turn and expose a vulnerable flank, cause fear of sudden and unexpected casualties, and weaken the attacker's will to fight. (See FM 20-32, FM 5-102, FM 100-2-1, and FM 100-2-2 for more detailed information on minefields.)

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ANTITANK DITCH

The antitank ditch or dry gap is an obstacle frequently found on the battlefield. When covered by fire, it will delay, canalize, or turn the flank of an attacker. If the spoil is not used for a berm, it should be spread out. The antitank ditch may or may not have a berm on the emplacing unit side. The antitank ditch will normally be 3.3 meters or more wide and 1.5 meters or more deep (see Figure C-1). An antitank ditch should be reinforced with mines or wire to provide a more complex obstacle for the attacker to overcome.

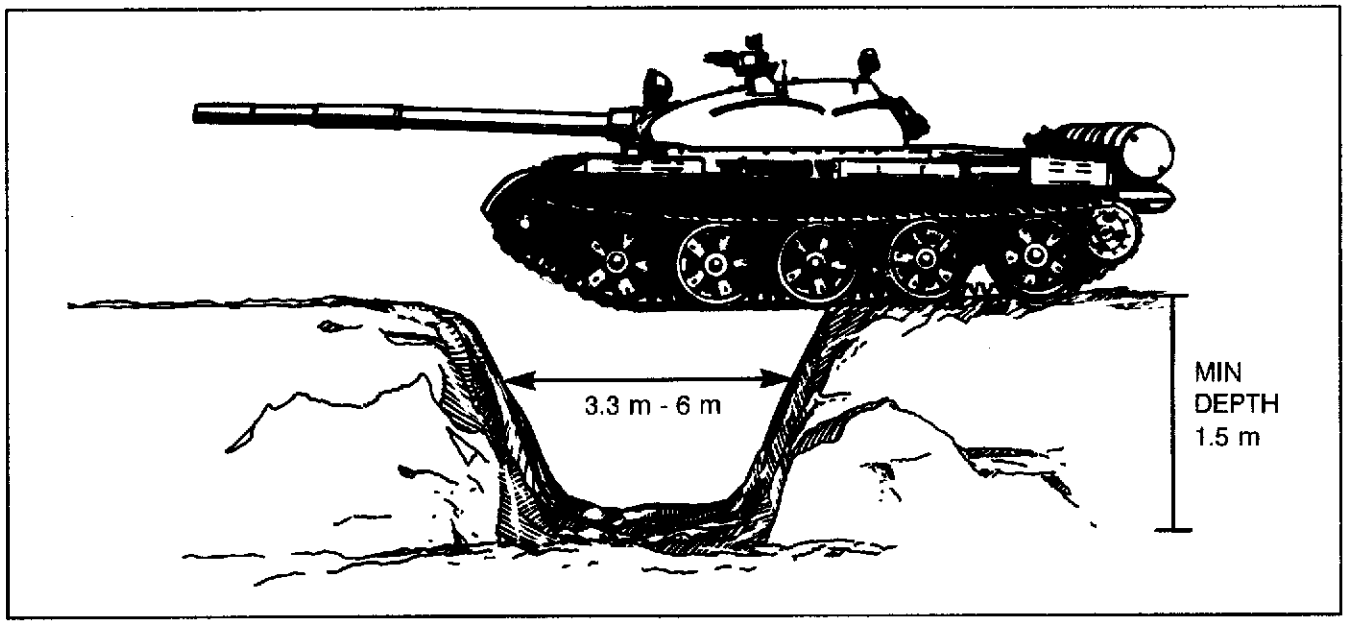

Figure C-1. Antitank Ditch.

ROAD CRATERS

Road craters are effective, rapidly-emplaced reinforcing obstacles. Use them on roads or trails where the crater's flank is tied into an existing obstacle such as dense woods, steep slopes, buildings, or an antitank ditch. If the crater's flanks are not tied into an existing obstacle, mines should be emplaced on the flanks and covered by direct and indirect fire. To be effective, a road crater must be at least as wide and as deep as an antitank ditch, and should be supplemented with mines.

ABATIS

An abatis is effective against vehicular movement (see Figure C-2). Trees are felled so that the tops crisscross and point toward the enemy at approximately 45-degree angles. Trees should be blown at least 1.5 meters from the ground and remain attached to the stump to provide an obstacle to the flanks of the abatis. The abatis should be a minimum of 75 meters deep. An abatis is most effective when used where roads, trails, or firebreaks pass through heavily wooded areas, or along thinly tree-lined highways if the surrounding terrain provides limited trafficability. An abatis should be mined or booby-trapped and covered by fire.

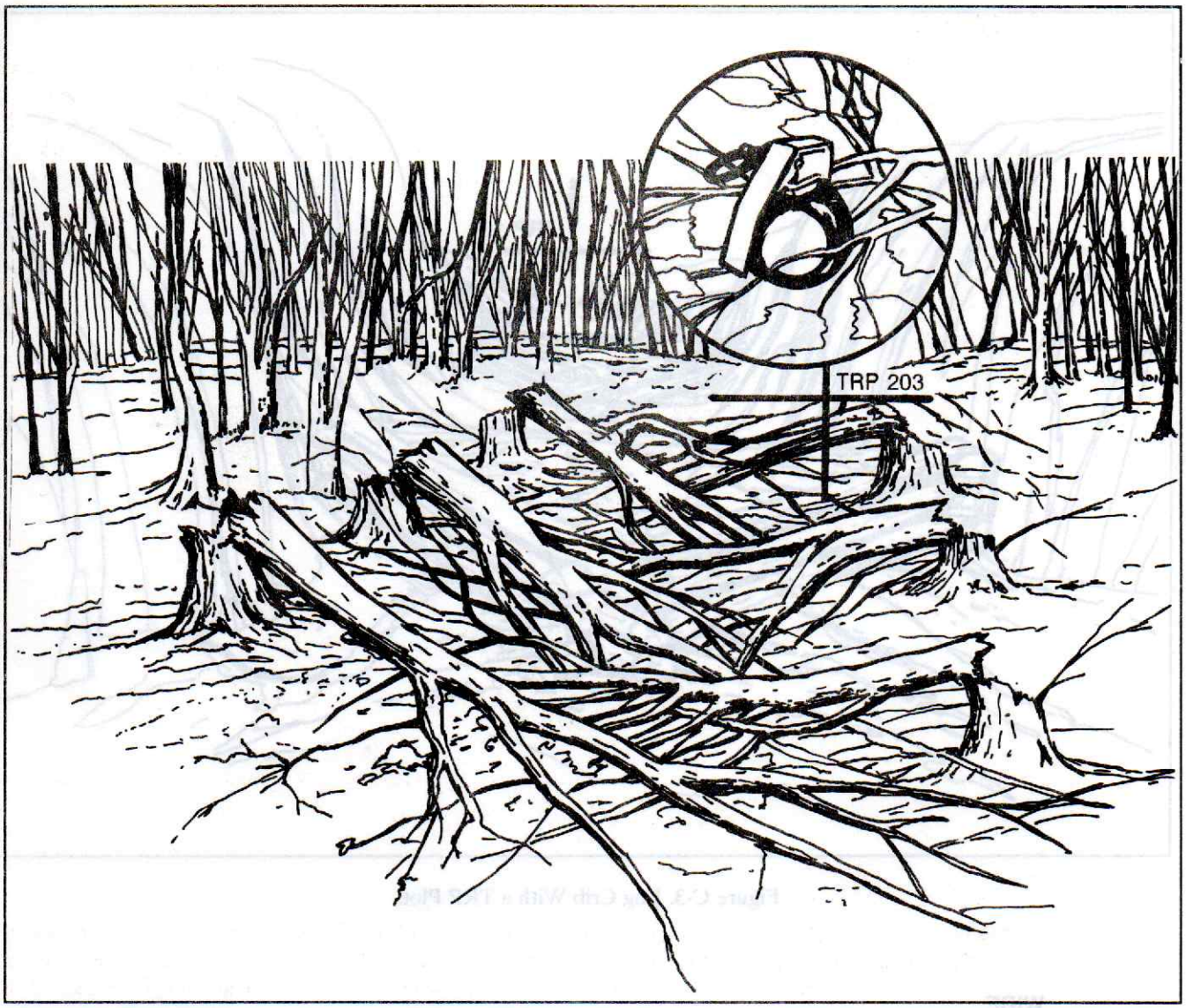

Figure C-2. Abatis With a TRP Plot.

LOG OBSTACLES

Log cribs, hurdles, and posts are used in wooded areas and across roads or paths. Log cribs are log structures filled with dirt and rock (see Figure C-3). They are generally built with pioneer tools and hand labor and require extensive time and effort. Log hurdles are most effective when sited on the steepest portion of a slope where tracked vehicles approach the critical grade. Log posts are among the most effective antivehicular obstacle because each post presents a breaching problem to the attacker.

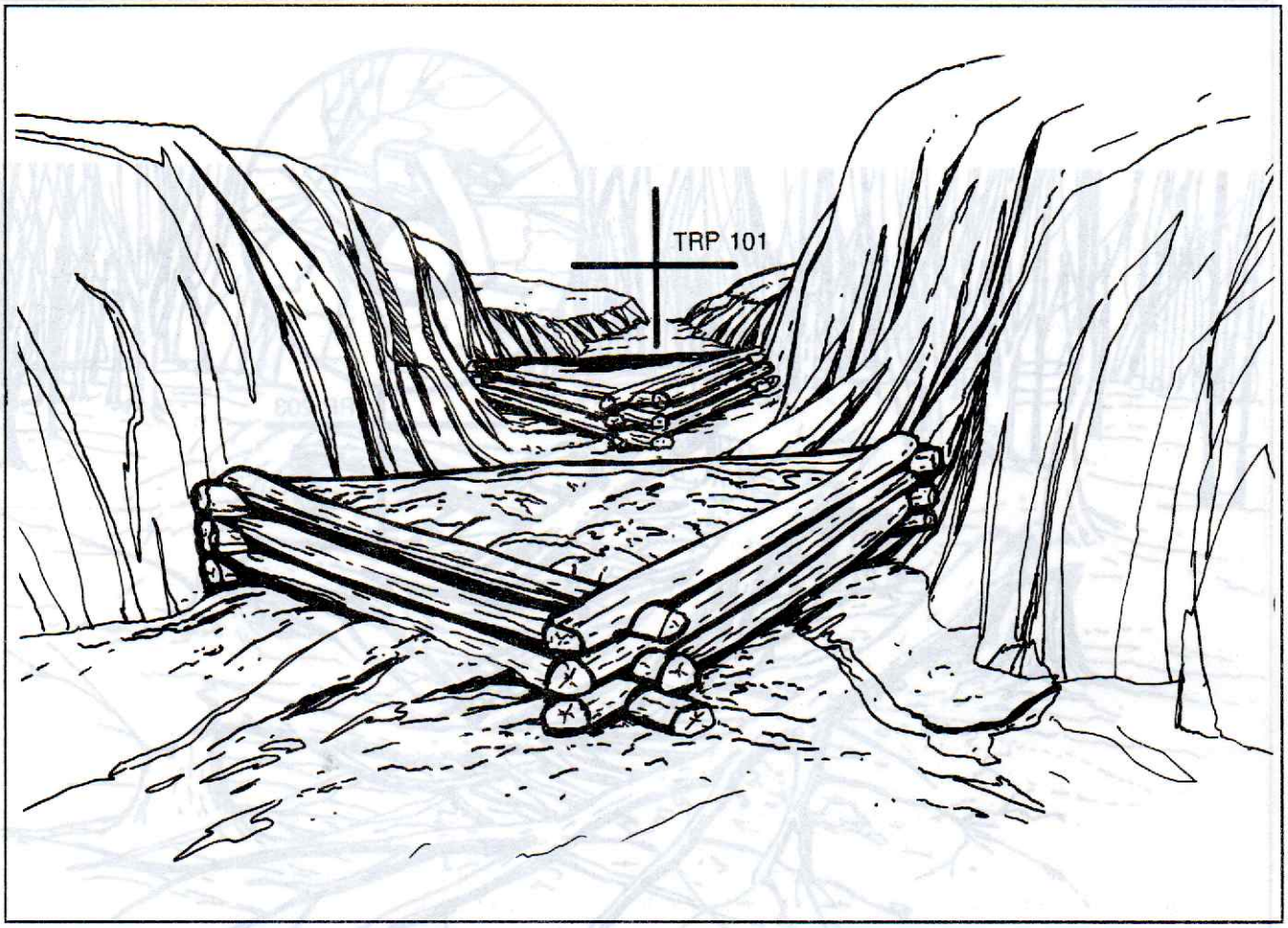

Figure C-3. Log Crib With a TRP Plot.

WIRE

A wire obstacle is an effective and flexible antipersonnel obstacle. Wire obstacles are frequently employed on dismounted avenues of approach. The company team may encounter or emplace wire obstacles in the form of double-apron, triple-standard concertina, tanglefoot, and four-strand fences. When used by themselves, wire obstacles are not very effective against armored vehicles unless employed extensively in depth; but when used with mines, they can become very effective.

TANK WALL

The tank wall is constructed of dirt and rock. It is used to canalize the attacker and cause him to expose a vulnerable area. If the attacker chooses to drive over or breach the wall, his vehicle will usually present belly shots to the defender while the attacker is unable to engage (see Figure C-4).

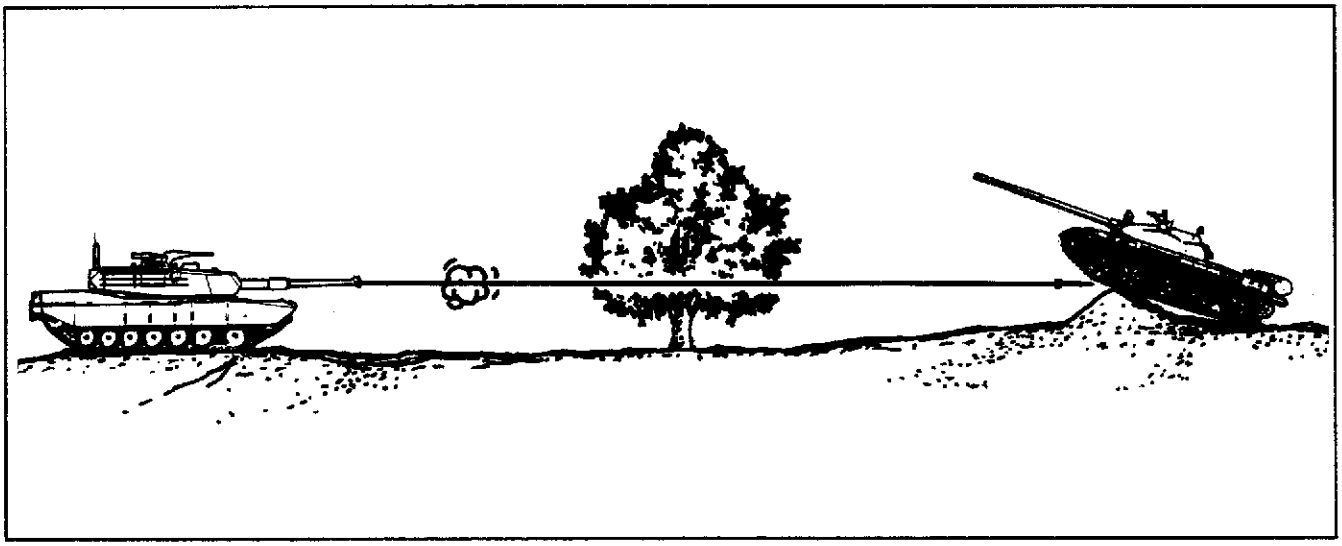

Figure C-4. Belly Shot Created by Obstacle.

(See FM 5-102 and FM 71-2J for more detailed information on obstacles.)

Section II. DEFENSIVE CONSIDERATIONS

Obstacles covered by fires are a major combat multiplier. The defending commander can influence the enemy's movement by skillfully using the terrain and reinforcing existing obstacles.

EMPLOYMENT PRINCIPLES

Use obstacles to delay and disrupt enemy formations, inflict casualties on them from friendly weapons and mines, and canalize the enemy into engagement areas where fires can be concentrated. Properly used obstacles will increase engagement time, create stationary or slow-moving targets, and cause the enemy to expose vulnerable areas to fires (rear, belly, top, and flanks). The enemy can be stopped at a known distance and a known range, increasing the effectiveness of the company team's weapon systems. Obstacles can also delay the enemy, allowing the company team to disengage and move to subsequent positions if required. Obstacles must –

- Be covered by direct and indirect fires.
- Be integrated with and reinforce the scheme of maneuver.
- Be integrated to maximum extent with existing and other planned obstacles.
- Be employed in depth.

- Be employed for surprise.
- Be difficult to bypass unless employed to canalize the enemy.
- If reserve, be executed in accordance with instructions in the target folder.

PLANNING CONSIDERATIONS

A company team commander must consider several items when planning the use of obstacles. Each item is just as important as the other and cannot be overlooked.

Mission (Scheme of Maneuver)

Plan obstacles to support the intent and concept of the battalion task force and brigade commanders. Consider how obstacles will affect the company team's maneuver if it is forced to conduct a counterattack. Decide what you want to achieve with the obstacle:

- Fix or delay the enemy for a longer engagement time.
- Allow friendly disengagement.
- Canalize the enemy into an engagement area.
- Expose enemy vulnerable areas to direct fire.

If a security force forward of the company team's sector must withdraw through the company team's lines, provide for and assist that force as it passes through. If a lane is left in the obstacle for the force to pass through, the company is responsible for that lane and must designate someone to close it.

Decide in what order (priority) obstacles will be emplaced. This is important because the enemy might attack before all obstacles are emplaced. Consider which obstacles are more critical to the scheme of maneuver as well as what personnel, equipment, and materials are required and how long it will take to construct the obstacles. (If the company team is constructing task force obstacles, the priority of obstacle construction for those obstacles should come from the task force.)

Enemy

Consider how the enemy might react to the obstacles. Obstacles should surprise the enemy. Terrain can often be used to prevent enemy observation of the obstacles. Threat forces usually have breaching capability with lead elements. Estimate where this breaching equipment will be first, and where it can be destroyed. Destroying enemy specialized engineer vehicles has priority over obstacle breaching. The enemy will attack as fast as possible to preserve momentum. Frequently, the enemy will force a breach by bulling his way through regardless of losses, particularly if he has no specialized engineer equipment. Enemy reconnaissance, often accompanied by engineers, will attempt to find and mark bypasses through obstacles or break those that must be breached. Therefore, frequently inspect the obstacles and repair any breaches found.

Terrain

Carefully analyze the terrain, in conjunction with enemy avenues of approach, to determine where obstacles can be employed. This will often determine the exact location of obstacles and the types of obstacles the terrain will support. Obstacles cannot be effective if masked by terrain that prevents friendly observation and fires.

Troops Available

Use all available personnel, while still performing other critical aspects of position preparation. The unit will often be required to construct obstacles as part of an integrated battalion task force obstacle plan. Engineers will normally be retained under task force control during defensive preparations, although they may be working in the company team area or sector. The types of obstacles needed may be affected by the availability of engineers. When available, the engineers will advise and help construct the obstacles. The company team may be required to provide personnel with a leader and some equipment to help the engineers construct obstacles. The availability of personnel may determine which obstacles can be employed. It is essential that engineers coordinate their plans and missions with the company team commander they are supporting. It is also critical for the company team commander to inform the supporting engineers of changes in requirements or the tactical situation.

Equipment, Materials, and Time

When developing the obstacle plan, consider the materials, equipment, and time required to construct or emplace obstacles. The materials (such as antitank and antipersonnel mines, concertina or barbed wire, or demolitions) needed to construct the obstacles may be part of the company team's basic load or load plan. Some of these materials may have to be requested and picked up from the task force trains. Use natural materials (such as rocks or logs) whenever possible. Natural materials can be very effective, and they may be the only materials in sufficient quantity for the company team to use.

Consider what equipment is available when determining which obstacles to employ. The organic tools and equipment are only the basic issue items (shovels and picks). If the M88 of the attached company maintenance team is available, its spade can be used to back spade or move loose spoil and rubble. The M88 blade is not a dozer blade and cannot dig positions. Larger items of equipment are provided by engineers supporting the battalion task force. This equipment may be the M9 ACE, bulldozers, CEVs, bucket loaders, or small emplacement excavators to construct antitank ditches or walls, or it could be the ground emplaced minefield scattering system (GEMSS), M57 minelayer, or other device to lay a minefield. (See Chapter 6, Section III for further information about engineer equipment.) Consider which vehicles to send to pick up the materials needed.

Construction time is yet another consideration in the planning process. Figure C-5 shows the planning time for some obstacles.

OBSTACLE	PERSONNEL AND EQUIPMENT	AMOUNT OF OBSTACLE	TIME
Antitank mines	1 man	4 mines	1 hour
Antipersonnel mines	1 man	8 to 16 mines	1 hour
Minefield	GEMSS	1,000 X 60 meters	1 hour
Road crater	1 engineer or infantry squad	40 ft long, over 25 ft wide, 8 ft deep (shape and cratering charges)	2 to 3 hours
		30 ft long, 18 ft wide, 8 ft deep (M180 kit)	1 to 1.5 hours
Antitank ditch	2 dozers	80 to 100 meters long	1 hour
Abatis with mines	1 engineer platoon	75 meters long	2 hours
Log crib	1 engineer squad	1 crib	6 hours
Triple standard concertina	1 platoon	300 meters long	1 hour

Note: Emplacement includes unpacking, arming, burying, camouflaging, and spoil removal. Surface-laid, uncamouflaged mines can be emplaced more rapidly than other mines.

Figure C-5. Obstacle Planning Timetable.

This appendix implements STANAG 2047.

APPENDIX D

NBC OPERATIONS

The Threat considers chemical hazards a normal condition on the battlefield. They use chemicals during both defensive and offensive operations and are prepared to accept casualties and reduced efficiency in exchange for tactical gain. You must understand the capabilities of these weapons and how to negate their effects.

Section I. NBC DEFENSE

Chemicals add a new dimension to the battlefield. They can produce mass casualties that overtax the medical evacuation and replacement systems, create heat and psychological casualties, and degrade speed and accuracy in gunnery. During chemical contamination –

- Units and individuals lose their identity.
- Command and control deteriorate.
- All simple human tasks such as eating, sleeping, moving, and passing body wastes become difficult, complicated, unclean, and miserable.

Training and SOPs are keys to reducing casualties and enhancing a unit's ability to continue operations in an NBC environment.

NBC defense no longer means just protect yourself and stay alive. We must take educated, calculated risks. NBC casualties are the price of waging war. NBC is a condition, not a task in the mission. Weigh degradation of capabilities caused by MOPP gear against potential casualties from NBC attack. Going too far in either direction can reduce combat power to unacceptable levels. NBC defense doctrine emphasizes "mission-oriented" when discussing mission-oriented protective posture. MOPP was designed for maximum flexibility to maintain combat capability at the highest level possible, despite contaminated conditions. This process is called MOPP analysis.

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MOPP LEVEL	OVERGARMENT	BOOTIES	+MASK/HOOD	GLOVES
0	*Stored nearby	*Stored nearby	Carried	*Stored nearby
1	Worn opened or closed based on temperature	Carried	Carried	Carried
2	Same as MOPP 1	Worn	Carried	Carried
3	Same as MOPP 1	Worn	Worn, hood opened or closed based on temperature	Carried
4	Worn closed	Worn	Worn	Worn

+ Includes M258A1 kit, detector paper, and three NAAK MARK I injectors.

*Combat vehicle or duty location.

Figure D-1. Table of MOPP Levels and Protective Equipment.

NBC defense training must strike a balance between protection and mission accomplishment. This training includes techniques of decontamination and MOPP relief to rebuild combat potential. In combat, focus on the enemy rather than the contamination. NBC contamination is an aspect of METT-T and the commander's analysis of the situation.

Section II. FUNDAMENTALS OF NBC DEFENSE

NBC CONTAMINATION AVOIDANCE

Protection can be improved by locating, identifying, and reporting NBC hazards; by warning about NBC hazards; and through passive means. Passive measures decrease the probability of attack by reducing target signature and improving survivability. These measures include concealment, cover, dispersion, OPSEC, and signal security.

Avoidance can be achieved by locating and marking contaminated areas along routes, in battle positions, and in assembly areas. Reconnaissance and quartering parties should be prepared to do this. Locating and identifying the type and concentration or density of contamination enables you to develop a plan to bypass, cross, or operate in a chemical or radioactive hazard.

In addition to alarms, M9 paper can detect liquid contaminants. Strips of M9 paper taped to clothing, equipment, and vehicles can provide the first warning that a contaminated area has been entered or a chemical attack is occurring. However, the paper can react to nonthreatening liquids so the M256A1 chemical agent detector kit must be used to verify contamination.

Look for evidence of chemical agents in the physical reactions of the soldiers. However, physical symptoms of a chemical agent can be similar to toxins. Therefore, an M256A1 kit or M8 paper should be used to verify chemical agent symptoms.

	NERVE	BLISTER	BLOOD	CHOKING
HOW NORMALLY DESSEMINATED	Aerosol or Vapor Liquid Droplet	Liquid Droplet	Vapor	Vapor
SYMPTOMS	Difficult Breathing, Drooling, Nausea, Vomiting, Convulsions, and Blurred Vision	No Early Symptoms (Mustard, Nitrogen Mustard) Burning Eyes, Stinging Skin (Lewisite, Mustard Lewisite) Irritated Eyes and Nose (Phosgene Oxine)	Convulsions and Coma	Coughing, Choking, Nausea, Headache, and Tightness in Chest
EFFECTS	Incapacitates (Inhaling high concentration may cause death) Incapacitates (If contaminated skin is not decontaminated immediately, may cause death)	Blisters Skin, Damages Respiratory Tract (May cause temporary blindness, some agents sting and form wheals on skin)	Incapacitates (Inhaling high concentration may cause death)	Floods and Damages Lungs (May cause death)
FIRST AID	Nerve Agent Antidote, Mark 1 (Artificial respiration may be necessary)	Same as for 2d or 3d degree burns	Inhale Amyl Nitrite (Artificial respiration may be necessary)	Avoid Movement and Keep Warm for Severe Symptoms
DECONTAMINATION	M258A1 Flush Eyes with Water, Decontaminate Skin Using M258A1	Flush Eyes with Water, Decontaminate Skin with M258A1 or Wash with Soap and Water	None	None
PROTECTION	Protective Mask and Clothing	Protective Mask and Clothing	Protective Mask	Protective Mask

Figure D-2. Table of Chemical Agent Characteristics.

No method exists to detect biological agents (including toxins). Increased illness, however, could indicate the existence of a biological threat. Toxins act much faster than biological agents.

Armored vehicles have on-board gas particulate filter units (GPFU) that provide filtered air directly to the protective mask face piece. Combined with the environmental control system, GPFUs reduce heat stress casualties and restrictions in the crew's capabilities. Regular maintenance of this system and inspections of the filters are critical to ensuring proper operation.

The best defense against biological agents is to make sure hygiene discipline, field sanitation, and preventive medicine measures are enforced.

A nuclear hazard presents additional considerations for protection. A nuclear warning (NUCWARN) message will not be sent from the battalion task force. (Battalion is the lowest level to receive a NUCWARN or chemical warning [CHEMWARN] message.) Instead, battalion will send specific instructions on what actions to take. This will be a brief message and should contain—

- A proword indicating that the message is a nuclear strike warning.
- A brief message, prearranged by SOP, directing the team to observe a specific nuclear defense level or evacuate the area.
- The expected time of burst.
- The direction of burst.

For maximum protection, the company team must—

- Position armored vehicles to reduce blast damage and radiation exposure.
  - –Orient tanks with the rear toward the strike and the main gun pointed away from the strike so the engine shields against radiation and protects the gun tube from flying debris.
  - –Orient BFVs toward the strike location with the turrets pointed away from the strike (as tanks).
  - –Remove TOW missiles from the launcher and stow them.
  - –Close and secure all hatches.
  - –Cover all vision blocks and sights.
  - –Evacuate wheeled vehicle, IFV, and APC personnel to bunkers, if available. (Only personnel buttoned up in tanks and bunkers are considered to be under maximum protection.)
- Use sandbags for radiation shielding, if available.
- Secure and cover, or remove, equipment that is stowed on the outside of the vehicle.
- Take down antennas and disconnect all cables, including handsets, from all radios except a minimum of mission-essential sets to monitor specific nets as required by SOP.

For minimum protection, the company team must—

- If moving, and time does not allow for digging in, assume positions at the bottom of hills. (The best shielded position is over the brow of a hill and part way down the slope [see Figure D-3]).
- Evacuate personnel from wheeled vehicles.

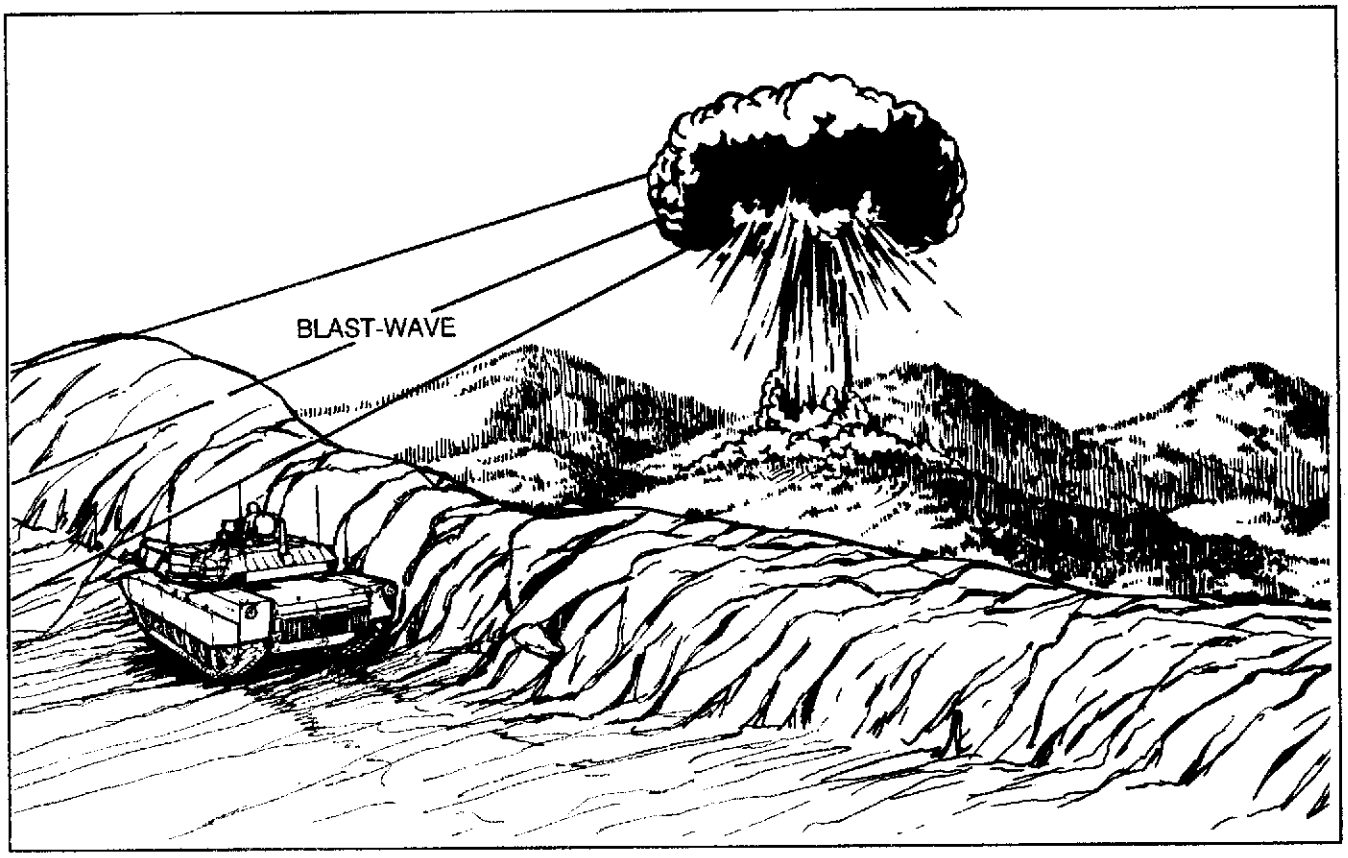

Figure D-3. Blastwave Interaction With Hills.

DECONTAMINATION

Biological and Chemical

After biological or chemical contamination, decontamination, to some degree, must take place before the protection level is reduced below MOPP 4. The tank crewmen or squad members can direct the following quick decontamination actions:

- Decontaminate skin with the M280 squad wipes or M258A1 kit.
- Wipe down personnel and equipment with the M280 decon kit individual equipment (DKIE).
- Spray down operator using the M13 decon apparatus portable (DAP) or M11 decontamination apparatus on vehicle exits and entrances and any areas necessary for operation.

Casualties may be so great that you must disengage and conduct decontamination. This may be done by platoon, section, squad, or crew. Decontamination by platoon offers the best command and control. Conduct hasty decontamination as far forward as possible.

TYPE	BEST START TIME	PERFORMED BY	TECHNIQUE	EFFECTS
BASIC SKILLS	Within 1 min	Individual	SKIN DECONTAMINATION	Stops agent from penetrating.
	Within 15 min	Individual or crew	PERSONAL WIPEDOWN OPERATOR'S SPRAYDOWN	
HASTY DECON OPERATION	Within 6 hours	Unit Battalion, Crew, or decon squad	MOPP GEAR EXCHANGE VEHICLE WASHDOWN	Possible temporary relief from MOPP 4. Limit liquid agent spread.
DELIBERATE DECON OPERATION	When mission allows reconsti-tution	Unit Decon Platoon	DETAILED TROOP DECONTAMINATION DETAILED EQUIP-MENT DECONTAMI-NATION	Probable long-term MOPP reduc-tion with minimum risks.

Figure D-4. Decontamination Techniques.

If a biological contaminant (including toxins) is suspected, follow the same decontamination procedures as with chemicals.

Nuclear

Decontamination can begin when fallout stops or when you have left the contaminated area. To perform individual decontamination—

- Brush or wash clothing and equipment thoroughly to remove dust particles. (This should be done away from the position to be occupied.)
- Shower and change clothes.

- If there is a great deal of dust in the air, wear a scarf or other piece of cloth to cover the mouth and nose. (Do *not* use the protective mask unless there is a chemical threat. The dust will contaminate the filters.)

To decontaminate the equipment and area—

- Turn over soil (at least 7 inches down) in the immediate area around fighting positions or vehicles.
- Wash vehicles and weapons using any available water source in an area away from your position.

Section III. ORGANIZATION OF NBC DEFENSE

Organize NBC defense teams from your own resources. NBC organization should consist of an NBC school-trained officer, the chemical NCO, and an enlisted alternate from company headquarters. Personnel will also be designated and trained to operate all assigned NBC equipment and to assist during decontamination operations (as an additional duty).

The chemical NCO will advise and assist in the NBC defense activities of the company and in training NBC equipment operators and decontamination teams. He advises the commander on operational exposure guidance and unit decontamination operations. Assisted by an enlisted alternate, he coordinates radiological monitoring, chemical detection, and decontamination operations. It is recommended that the chemical NCO locate with the XO or FSO. An alternate location might be with the first sergeant in the company combat trains. The NBC defense officer, chemical NCO, and the enlisted alternate are trained to—

- Assist in all NBC training.
- Receive, prepare, evaluate, and disseminate information on enemy and friendly NBC attacks.
- Inspect individual and unit NBC equipment and advise on its maintenance.
- Ensure that the basic load of individual and unit NBC equipment and supplies are maintained.
- Assist employment of unit detection, monitoring, survey, and decontamination teams.
- Maintain unit radiation status records from data obtained from the IM93 tactical dosimeter.

Section IV. COMBAT OPERATIONS IN AN NBC ENVIRONMENT

OFFENSIVE OPERATIONS

MOPP 4 degrades both the armored crewman's and the infantryman's ability to maintain orientation in battle. Chemical mines supporting obstacles pose a serious threat and infantrymen are forced into MOPP 4. This hinders the breaching effort:

- Movement rates of dismounted infantry are reduced.
- Target acquisition for tanks and BFVs is hindered.

- Synchronization of combat assets at critical times and places on the battlefield is more difficult.
- Platoons move more slowly and shoot less often.
- Combat support arrives later.
- CSS lines become longer and have the added problem of contaminated supplies.

The risk of exposing protected infantrymen by dismounting them in contaminated areas may outweigh the risk of attacking mounted. Ultimately, the pattern of contamination risk and nature and duration of the combat operation must be considered when making the decision of whether to dismount or attack mounted.

DEFENSIVE OPERATIONS

Since MOPP gear prevents personnel recognition at a distance and increases the physical effort needed to move from position to position, division of authority is critical. Anticipate being hit by chemical agents while conducting a defensive mission. Analysis of the terrain by the chemical NCO should be part of the preparation of the initial battle position. He will identify those areas in which agents are less likely to accumulate. This information will help identify alternate platoon positions.

The leader's position is critical in a chemical environment. When reaction time is reduced, options are reduced. Decisions must be made early; you may be forced to commit yourself to a course of action that you cannot change. Therefore, to make timely decisions, you must make them at contingency decision points where the battlefield can be seen.

APPENDIX E

SMOKE OPERATIONS

Properly planned and executed smoke operations significantly increase the survivability of friendly forces and degrade Threat command, control, communications, and intelligence capabilities. Specifically, smoke can be used to –

- Deny the enemy information.
- Reduce the effectiveness of enemy target acquisition.
- Restrict nap-of-the-earth and contour approaches for aircraft.
- Disrupt enemy movement, operations, and command and control.
- Create conditions to surprise the enemy.
- Deceive the enemy.
- Attenuate the thermal effects of nuclear weapons.

Section I. SMOKE ON THE BATTLEFIELD

Smoke has four general applications on the battlefield:

- *Obscuration smoke* is employed on or against the enemy to degrade his vision both within and beyond his location. Current and planned armor combat vehicles are equipped with thermal sighting devices that allow gunners to see and shoot through smoke. This capability coupled with obscuration smoke on an enemy formation is very effective and demoralizing to Threat armor and mechanized forces. Smoke can –
  - –When delivered on an enemy ATGM position, prevent the system from acquiring or subsequently tracking targets.

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–When employed on an attacking armored force, cause it to vary its speed, inadvertently change its axis of advance, deploy prematurely, and rely on nonvisual means of command and control.

–Deny an enemy air avenue of approach.

- *Screening smoke* is employed in friendly areas of operation or in areas between friendly and enemy forces to degrade enemy ground and aerial observation and defeat or degrade enemy electro-optical systems. Screening smoke is employed to conceal ground maneuver, breaching and recovery operations, key assembly areas, and supply routes.

- *Deceptive smoke* is used to mislead the enemy about US intentions. For example, smoke can be employed on several avenues of approach to deceive the enemy as to the avenue of the main attack.

- *Signaling smoke* (or identification smoke) is employed to identify targets, supply and evacuation points, and friendly unit positions and to provide for prearranged battlefield communications.

Smoke on the modern battlefield will be intensely employed, especially by Threat forces. It may come from a number of sources ranging from burning vehicles to artillery-employed smoke to smoke grenades. There are seven systems available to produce smoke for small-unit operations:

- *Mortars* from the battalion task force mortar platoon are the most rapid and responsive indirect smoke delivery means available to the maneuver commander. However, their small basic load can limit the size and duration of the screen they can provide. Because the mortar smoke round is a white phosphorous (WP) round, it can degrade the effectiveness of thermal sights.

- *Field artillery cannons* are used to place smoke on distant targets. This smoke, made of hexachloroethane (HC), has less effect on thermal sights than WP. As with mortars, field artillery has a small basic load of smoke-producing munitions.

- *Smoke pots* produce a large volume of white or grayish white smoke that lasts for extended periods. This is the only smoke system that floats and can be delivered by hand, vehicle, or helicopter. The company team will normally employ smoke pots during defensive and delay operations to cover movement and to screen breaching operations.

- *Smoke grenades* (hand grenades) produce white or colored smoke. White smoke grenades are most often used to cover or screen individual vehicles or small numbers of troops. Colored smoke grenades are primarily used for marking or signaling.

- *Vehicle smoke grenade launchers* are designed to produce a limited amount of smoke, as a self-defense measure, to screen or conceal the vehicle from individual enemy antitank gunners. It can be used to screen movement off of a position when you have been discovered.

- *Vehicle engine exhaust smoke system* (VEESS) uses diesel fuel injected into the engine exhaust to produce smoke. This system consumes fuel at the rate of one gallon per minute of operation. VEESS is primarily used by individual vehicles as a self-defense measure.

- *Tactical Smoke generators* are wheel- or track-mounted and available in the division chemical company. Their use is directed by brigade or, sometimes, by battalion.

DELIVERY SYSTEM	TYPE	TIME TO BUILD EFFECTIVE SMOKE	AVERAGE BURNING TIME
4.2-in Mortar	WP	1/2 min	1 min
155-mm FA	WP	1/2 min	1 to 1-1/2 min
	HC	1 to 1-1/2 min	4 min
105-mm FA	WP	1/2 min	1 to 1-1/2 min
	HC	1 to 1-1/2 min	3 min
ABC-M5 Smoke pot	HC		12 to 22 min
AN-M7, AN-M7A1, SGF-2 Smoke Pot	Fog Oil		8 to 13 min
M4A2 smoke Pot	HC		10 to 15 min
M1, 1016 Smoke Pot	HC		5 to 8 min
AN-M8 Grenade	HC		1-1/2 min
L8A1 Grenade	Red Phosphorous	10 sec	1 to 3 min

Figure E-1. Smoke System Characteristics.

Section II. PLANNING CONSIDERATIONS FOR EMPLOYMENT OF SMOKE

Planning smoke is an essential part of the overall tactical plan. Smoke is a combat multiplier. Its employment must be carefully planned to prevent interference with other units. Plan for smoke from all sources but include alternate options if artillery, mortars, smoke generators, or smoke munitions are not available. Smoke is also useful at night to degrade enemy night-vision devices. However, no plan should *depend* on smoke for success. Hope is not a method of planning.

Smoke screens for mounted forces should be terminated approximately 500 to 800 meters short of the final objective to allow maximum visibility during the final assault. For dismounted forces, the distance is approximately 100 to 200 meters.

Like other chemical munitions, smoke effectiveness depends on temperature, wind, and terrain. It is highly unpredictable. The task force S2 and artillery FSO can get weather information to help plan smoke. When possible, test the weather conditions prior to using smoke.

Section III. USE OF SMOKE DURING OFFENSIVE OPERATIONS

Plan artillery or mortar smoke to screen friendly movement or activity from enemy observation and fires. Smoke is placed directly on enemy positions or between the enemy and friendly elements.

If indirect-fire smoke is unavailable, smoke pots, hand-thrown and vehicle-launched smoke grenades, and VEESS can be integrated to screen movement effectively and conceal activity. Wind speed and direction are critical to emplacing smoke locally because, unlike artillery and mortar smoke, the location of the smoke source is not easily adjusted.

Screening smoke can support movement to bypass enemy positions or to allow you to close on the objective. Smoke will permit deployment into assault formation closer to the enemy. Orientation of the assault will be difficult once the company team enters the smoke. Thermal sights and stabilized guns can help drivers maintain direction.

When the company emerges from smoke, the vehicles are clearly silhouetted against the smoke. The unit will be experiencing temporary disorientation, readjusting formation, and refocusing eyes to the brighter light. This is the most vulnerable moment. If the company team emerges in column or as single, random vehicles, the enemy will concentrate his fires and defeat you piecemeal. Emerge from the smoke on line, firing through thermal sights to destroy or suppress the enemy on the objective. Careful preliminary reconnaissance is imperative when you plan to move through smoke. You may want to call for simultaneous indirect smoke to be placed directly on the enemy's position while you emerge from the smoke screen.

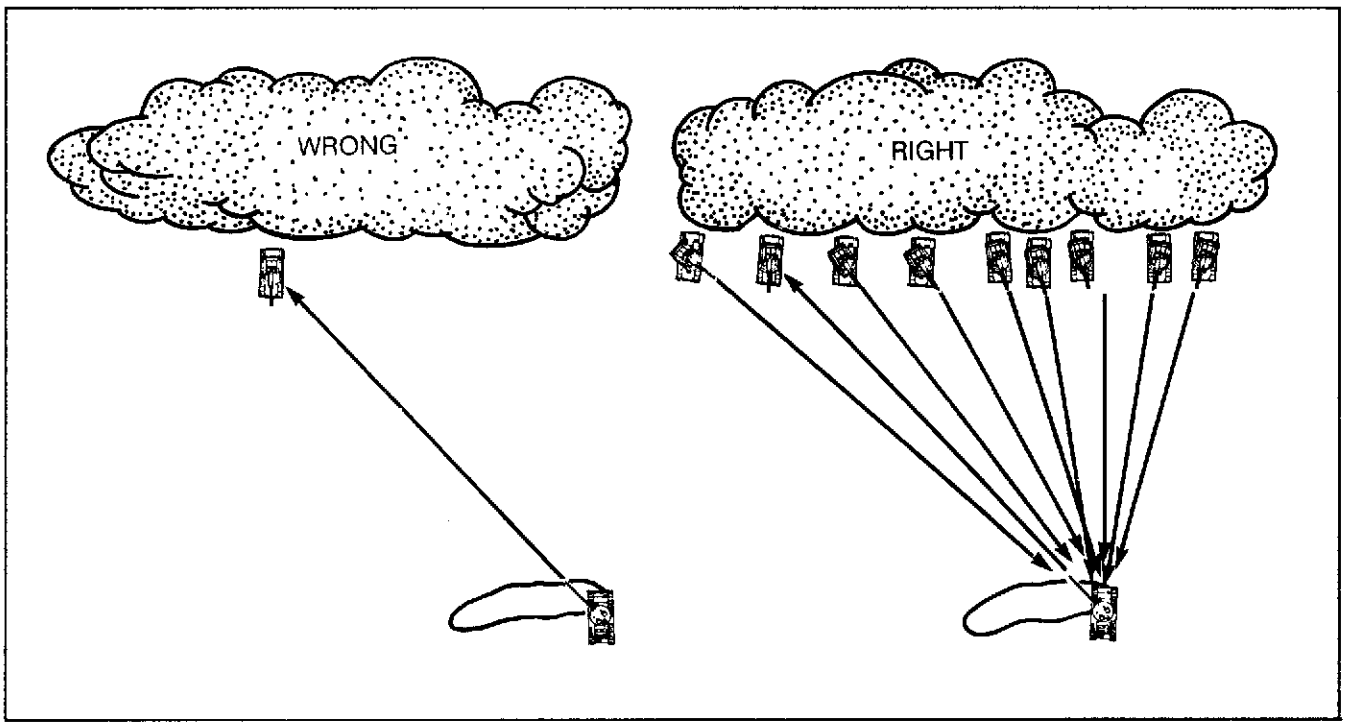

Figure E-2. Tanks and BFVs Moving in Line Formation Advancing Through a Smoke Screen.

Smoke is also vital in concealing breaching operations. Ideally, indirect-fire smoke is placed between enemy weapons and the obstacle. This allows the breaching force to see what they are doing clearly, maintain direction, and mark the breaches easily. The team then passes through the cleared breaches to deploy on the far side of the obstacle.

Smoke is always planned for breaching operations, even night operations. No amount of suppression by fire can prevent the enemy from observing his obstacles and calling in his own artillery. If the obstacle is not screened or obscured, the dismounted breaching force will be destroyed, the specialized engineer vehicles will be targeted, and the lanes will become enemy TRPs.

Deception is a vital part of offensive smoke operations. The enemy must consider all smoke as a potential threat. If smoke is used with the main effort only, the enemy will mass his forces to defend against that threat.

The unit is inherently vulnerable while moving. Poorly emplaced smoke or improper use of the VEESS will help the enemy identify and target your vehicles.

Smoke can also be used during offensive operations to—

- Disorient the enemy in his defensive positions.
- Defeat infrared tracking systems.
- Screen the location of passage points.
- Create a deception.
- Aid in securing the far side or beachhead during water crossings.

Section IV. USE OF SMOKE DURING DEFENSIVE OPERATIONS

Techniques for using smoke during defensive operations include—

- *Slow the advance of attacking forces.* Smoke will cause the attacker to reduce his speed and slow the momentum of his attack. Mortar and field artillery smoke mixed with HE makes the enemy button up. The company team can continue to use thermal sights to destroy the enemy in the smoke screen or wait until enemy vehicles exit the smoke. Enemy vehicles will then be silhouetted, making them easier to acquire, track, and destroy.
- *Separate and isolate attacking echelons.* This technique is used so the second echelon cannot see and assist the first echelon. The smoke will also slow the second echelon giving you more time to destroy vehicles in the first echelon.

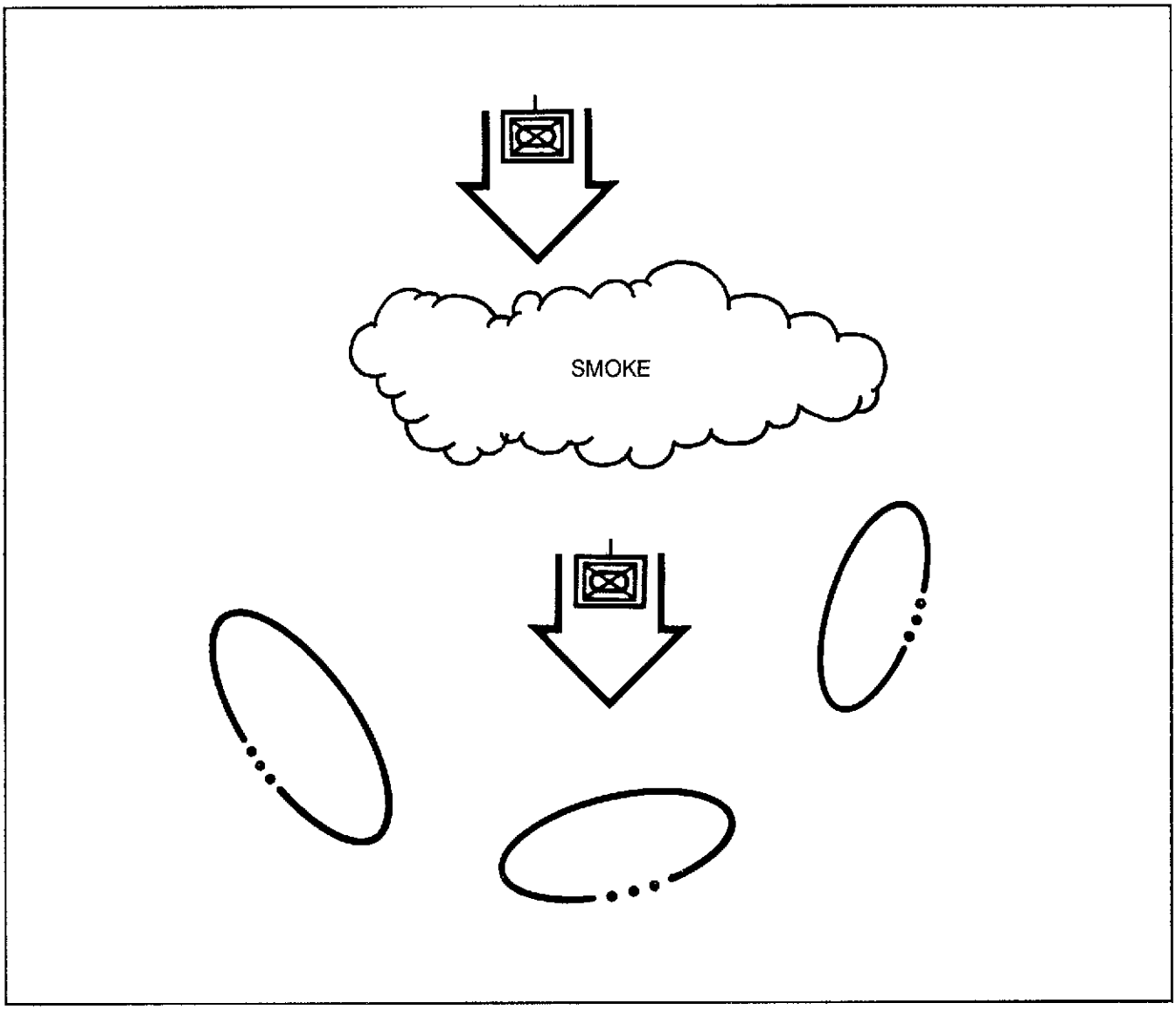

Figure E-3. Separate and Isolate the Attacker.

- *Force enemy infantry to dismount.* Smoke, artillery-delivered scatterable mines, and DPICM are employed together in this technique. The smoke screen is established in front of the enemy using mortar and field artillery fires. Scatterable mines and DPICM are then deployed in the screen. As the enemy infantry dismounts, they are killed by the mines and DPICM.
- *Cover movement.* Smoke is produced in front of the defensive position so vehicles can be repositioned without being observed.

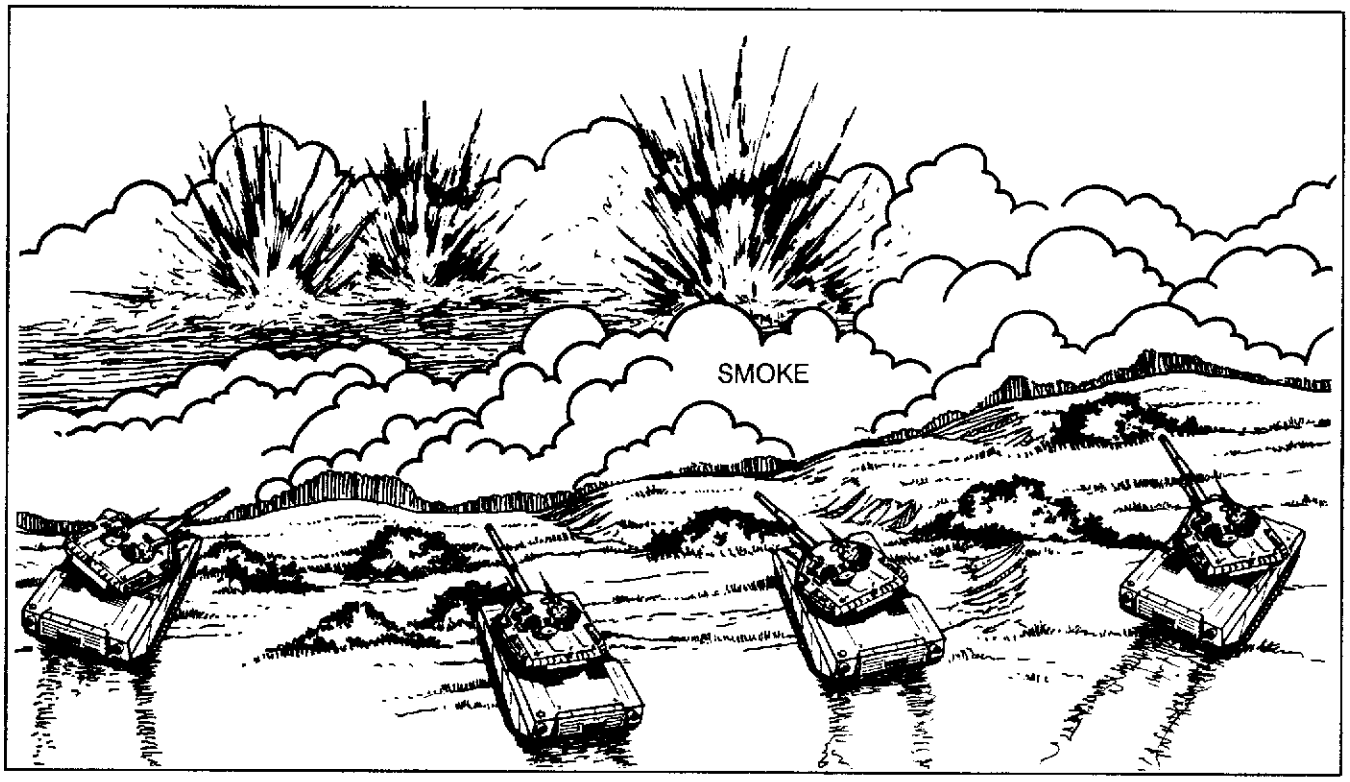

Figure E-4. Cover Movement.

- *Expose enemy helicopters.* Smoke placed directly on helicopter avenues of approach will force enemy helicopters to fly at higher altitudes exposing them to the fires from air defense or direct-fire weapons of the company team.

Section V. COUNTERMEASURES AGAINST ENEMY SMOKE

Countermeasures available against enemy smoke include –

- *See through smoke.* Thermal sights can see through many types of smoke with little or no degradation. If thermal sights are not greatly degraded by enemy smoke, the company team can fight as planned. If the smoke degrades the thermal sights to the point that the company team cannot fight as planned, move closer to the engagement areas and obstacles or adjust the engagement areas closer to the weapons.
- *Use countersmoke to blind enemy defenders.* This is used when the enemy produces a smoke screen in front of the attacking company team. When the company team exits the smoke screen, its vehicles will be silhouetted by the smoke and engaged by enemy gunners. To prevent this, place smoke between the enemy's screen and the objective using mortar or field artillery fires. This smoke will blind the enemy and cover your movement to the objective.

- *Use enemy smoke to cover friendly movement.* When the enemy places smoke directly on your defensive positions or when he establishes a screen in front of his advancing units, the team can use the concealment provided by the enemy smoke to occupy alternate or supplementary positions on the enemy's route of advance.

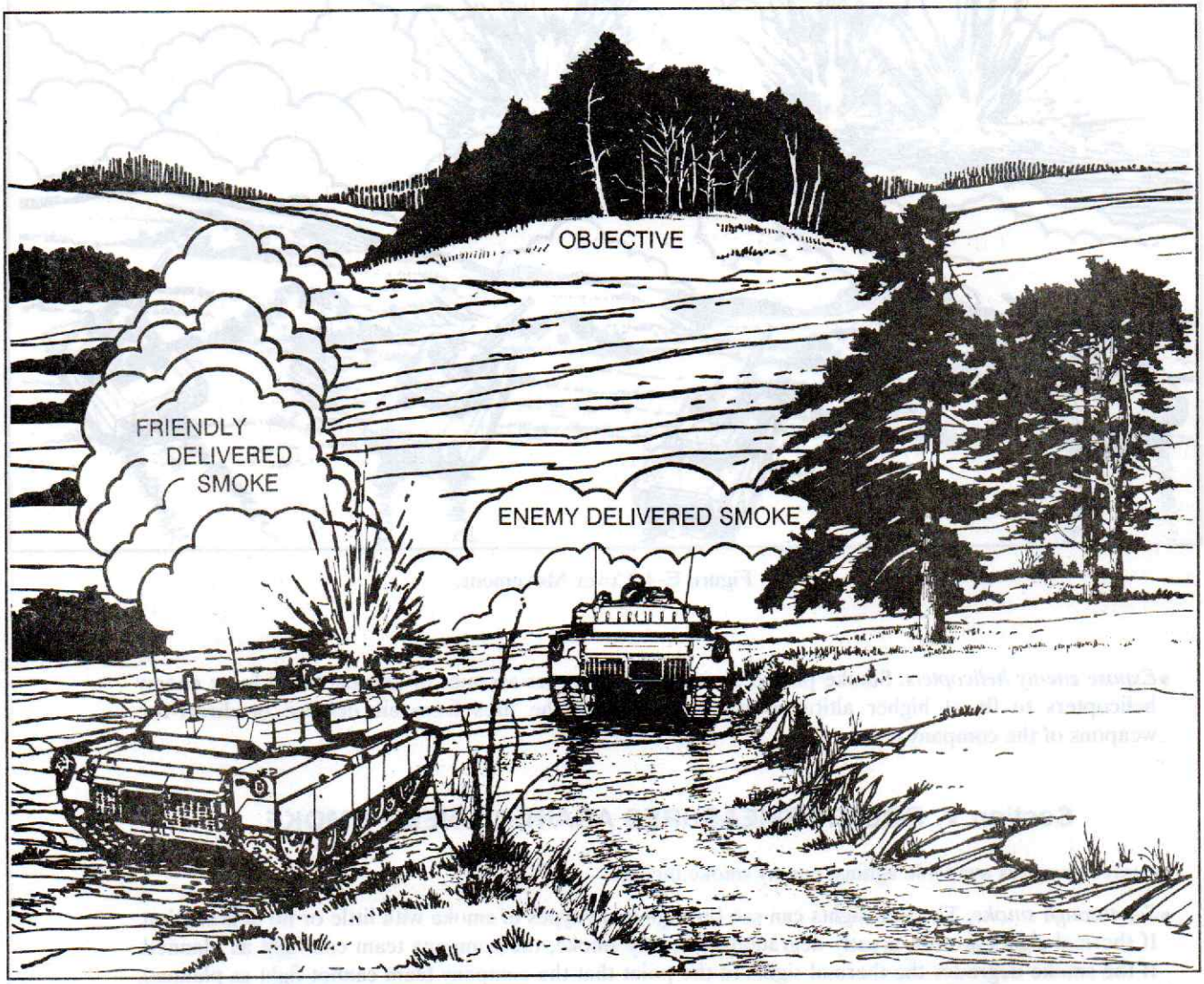

Figure E-5. Countersmoke to Cover an Offensive Maneuver.

- *Use CAS* (if aircraft and attack helicopters are in the area) to maneuver around enemy smoke to engage the enemy. After CAS engages the enemy, they will move as quickly as possible to an area where they are screened from the enemy by smoke. Although use of CAS and attack helicopters is not planned, you may be required to direct them into the battle.

APPENDIX F

DIRECTED-ENERGY WARFARE

The battlefield of the next war will include directed-energy warfare (DEW). DEW weapons are not magic, they must be considered like a sniper rifle (accurate point target system) or a machine gun (area target system). Anytime you are in contact with an enemy, you must prepare for DEW. Directed energy is only another line of sight, "direct-fire" device that will be used in combined arms combat. Directed-energy weapons have been seen in Afghanistan and elsewhere. You must understand the nature of DEW and how to defend against it, or it may become an enemy combat multiplier of enormous impact.

Section I. TYPES OF DIRECTED-ENERGY WEAPONS

Directed-energy weapons include lasers, microwave-radiation emitters, and particle-beam generators. Of these three types, laser and microwave-radiation emitter technology has already been applied to weapon prototypes.

Conventional weapons rely on chemical or kinetic energy in the form of a projectile. Directed-energy weapons rely on subatomic particles or electromagnetic waves impacting at or near the speed of light. The effect of laser weapons is to produce intense heat and light on a target that can burn out optics and blind those who operate them. High-power microwave (HPM) weapons can burn out electrical systems and components or create an electrical upset condition.

Directed-energy weapons are line-of-sight systems. Since the energy that they fire travels at or near the speed of light, time of flight to the target is essentially zero. A DEW gunner is not required to lead a target, and traditional ammunition resupply problems are not a constraint. Directed-energy weapons can attack heavily armored targets at their most vulnerable points, their optics (eyes) and soft electronics.

LASERS

Lasers are the category of directed-energy weapons most likely to be used against our forces in the near future. The most probable targets of enemy laser weapons will be the optics, specifically vehicle sights and sighting systems. Lasers can destroy optics and blind optic operators.

OPTICAL DEVICES

There are two general categories of optical devices used on the battlefield today: direct-view devices and electro-optic devices. (See Figure F-1.)

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DIRECT-VIEW DEVICES

Direct View

Eyeglasses
Contact Lenses
Sun, Wind, and Dust Goggles
Vision Blocks

Magnifying

Binoculars (X7)
Dragon Daysight (X6)
Daysight (ISU) (X4 and X12)
Backup Sight (X4)
M60-Series Tank Sights
M1-Series Tank Sights
105-Series Telescopes
.50 Caliber Sights

ELECTRO-OPTIC DEVICES

Image Intensifiers

AN/PVS 4
AN/PVS 5
AN/VVS 2 (Driver's Night Viewer)

Thermal Devices

Thermal Nightsight (ISU)
Dragon Thermal Nightsight
Tank Thermal Sight
TTS (M60A3)
TIS (M1)

Infrared Devices

Infrared TOW Missile Tracker
Infrared Dragon Tracker

Figure F-1. Direct-View and Electro-Optic Devices.

Direct-View Optics

A laser weapon targeted on see-through optics will damage the eyes of the targeted operator. The beam passes through the optical device and burns the eye, causing either temporary loss of vision (flash blinding) or permanent blindness. When the optical device has a magnifying capability (such as binoculars), the beam strength is magnified causing even greater injury to the eye.

Electro-Optics

A laser attacks non-see-through optics by burning the sensor or reticle inside the device degrading its capabilities. Some of the electrical circuit inside the device may also be damaged by the heat surge. However, this does not affect the operators.

Even when not using optical devices, soldiers are susceptible to laser weapons. Laser energy from friendly and enemy systems can damage the naked eye (damage may be temporary or permanent). Because the eye is more sensitive to light during darkness, laser weapons have a greater effect at night than during the day.

Radio frequency (RF) and HPM weapons give the enemy the capability of achieving electronic kills or electronic upset. They achieve these kills by destroying the electronic reentry system. HPM weapons may be used to attack command posts, ADA sensors, a variety of electronic communications (sensors, radar, computers, optical devices), fuzing, engines, and personnel.

Section II. PROTECTIVE EQUIPMENT

Due to the directed-energy hazard (from all laser range finders [LRF] and laser designators in the field), protective lenses are being fielded to protect soldiers from injury from reflected lasers or accidental direct engagement by an LRF or laser designator. All equipment operators must consult the appropriate training manuals to determine the location, storage, and installation of these lenses.

Electro-optics are also being fitted with protective lenses. Whenever a laser hazard exists and the electro-optics are not being used to track or engage targets, the protective doors over the optics should be closed to prevent damage from other lasers.

Each soldier is required to have one set of laser goggles. These goggles prevent injury from laser hazards (such as looking at a laser directly or through a direct-view optical device). All soldiers must know the information contained in the laser survivability manual.

All protective equipment must be checked by leaders during prepare-to-fire checks and precombat inspections prior to ARTEP evaluations, tactical exercises, gunneries, or actual combat.

Section III. DIRECTED-ENERGY TACTICS

TACTICAL SOP ITEMS

Offense

Since the exact location of LRFs and laser designators will not be known, soldiers must be protected from the time they cross the line of departure/line of contact (LD/LC) until combat is concluded. Therefore, the following becomes SOP:

- In the assembly area—
  - –Mount and inspect all filters.
  - –Inspect each soldier's laser goggles to ensure he has goggles and they are serviceable.
  - –Review knowledge of laser effects so soldiers know when they have been engaged and can take appropriate counteraction.
  - –Review knowledge of first aid for laser damage to eyes.
- In the attack position—
  - –Each soldier puts on laser goggles.
  - –Gunner's close any doors on optics they are not using.
- During the attack and consolidation, continue to wear laser goggles, especially when dismounting protective vehicles or using direct-view sights.

Defense

During defensive operations, a laser will probably be the first line-of-sight device the enemy uses. A tank will either lase a suspected target prior to firing the main gun, or an artillery observer will use the laser designator or range finder to control indirect fire missions. These actions can, inadvertently or deliberately, cause damage to personnel or equipment. Therefore, the following procedures must be used:

- When a vehicle or soldier moves from a hide or covered and concealed position, all filters, electro-optics, and laser goggles will be used.
- Optical protective doors will be opened only during required observation or when engaging targets.
- OPs and scouts will wear laser goggles when the commander determines that the risk warrants full-time wear of goggles.

SOLDIER PREPARATION

The main difference between being wounded by a laser or another type of direct-fire system is the absence of noise and detectable signature from the device. Soldiers should be trained and educated accordingly. Soldiers must train using laser protective equipment and protective techniques listed previously. All soldiers should know how lasers affect them. (This information is contained in the laser survivability manual.) Conduct first aid classes to prepare soldiers to aid DEW casualties.

The battlefield is an unnatural and stressful environment where panic is always possible. Avoid panic through proper training, protective measures, and education.

GLOSSARY

ABBREVIATIONS AND BREVITY CODES

A	alternate
AA	assembly area
AAA	antiaircraft artillery
ACA	airspace coordination area
ACR	armored cavalry regiment
ADA	air defense artillery
AH	attack helicopter
ALC	administrative/logistics center
ALN	administrative/logistics net
alt	altitude
amb	ambulance
ammo	ammunition
AP	armor piercing
APC	armored personnel carrier
APDS	armor-piercing discarding sabot
app	appendix
ARTEP	Army Training and Evaluation Program
arty	artillery
AT	antitank
ATGM	antitank guided missile
atk	attack
ATP	Allied Tactical Publication
AVLB	armored vehicle launched bridge
AZ	azimuth
BDAR	battle damage assessment and repair
bde	brigade

BFV	Bradley fighting vehicle
BHL	battle handover line
BMNT	beginning morning nautical twilight
BMO	battalion maintenance officer
BMP	Soviet vehicle
bn	battalion
BP	battle position
BRDM	Soviet vehicle
BSA	brigade support area
BTR	Soviet vehicle
btry	battery
CAS	close air support
cbt	combat
cdr	commander
CEV	combat engineer vehicle
CEWI	combat electronic warfare intelligence
CF	covering force
CFA	covering force area
CFL	coordinated fire line
CFV	Cavalry fighting vehicle
cGy	centiGray
chap	chapter
CHEMWARN	chemical warning
CINC	Commander in Chief
CMT	company maintenance team
co	company
COLT	combat observation lasing team
COMSEC	communications security
COP	combat outpost
CP	command post

CRP	combat reconnaissance patrol
CS	combat support
CSS	combat service support
CVC	combat vehicle crewman
DA	Department of the Army
DAP	decon apparatus portable
decon	decontamination
def	defensive
DEW	directed-energy warfare
DISCOM	division support command
DKIE	decon kit individual equipment
DPICM	dual-purpose improved conventional munitions
EA	engagement area
EENT	ending evening nautical twilight
eff	effective, effect
engr	engineer
EPW	enemy prisoners of war
evac	evacuate, evacuation
EW	electronic warfare
FA	field artillery
FAC	forward air controller
FASCAM	family of scatterable mines
FC	field circular
FDC	fire direction center
FEBA	forward edge of battle area
FFA	free fire area
FIST	fire support team
fld	field

FLIR	forward looking infrared
FLOT	forward line of own troops
FM	field manual
FO	forward observer
FPF	final protective fire
FRAGO	fragmentary order
freq	frequency
FSCL	fire support coordination line
FSCOORD	fire support coordinator
FSE	fire support element
FSO	fire support officer
FSS	fire support section
FSV	fire support vehicle
ft	foot, feet
gal	gallon
GEMSS	ground emplaced mine scattering system
GLLD	ground laser location designator
GPFU	gas particulate filter unit
GRREG	graves registration
GS	general support
GSR	ground surveillance radar
HC	hexachloroethane
HE	high explosive
HE-VT	high explosive, variable time
HHC	headquarters and headquarters company
HMMWV	high-mobility multi-purpose wheeled vehicle
HPM	high-power microwave
HQ	headquarters
hr	hour

hwy	highway
IAW	in accordance with
ICD	imitative communication deception
IFV	infantry fighting vehicle
IPB	intelligence preparation of the battlefield
IR	infrared
ISU	integrated sight unit
ITV	improved TOW vehicle
JAAT	joint air attack team
KIA	killed in action
km	kilometer
kmph	kilometers per hour
LAW	light antitank weapon
LC	line of contact
LD	line of departure
LD/LC	line of departure is line of contact
ldr	leader
loc	location
LOGPAC	logistics package
LP	listening post
LRF	laser range finder
LRP	logistics release point
m	meter
max	maximum
maint	maintenance
MANPAD	man-portable air defense

mech	mechanized
MEDEVAC	medical evacuation
MEMO	mission-essential maintenance only
METL	mission-essential task list
METT-T	mission, enemy, terrain (and weather), troops, and time available
MICLIC	mine-clearing line charge
MIJIFEEDER	meaconing, intrusion, jamming, and interference report
min	minimum, minute
MLRS	multiple launched rocket system
mm	millimeter
MOPP	mission-oriented protective posture
mort	mortar
MOUT	military operations in urbanized terrain
MP	military police
mph	miles per hour
MR	motorized rifle
MRB	motorized rifle battalion
MRC	motorized rifle company
MRD	motorized rifle division
MRE	meals ready-to-eat
MRL	multiple rocket launcher
MRP	motorized rifle platoon
MRR	motorized rifle regiment
MRS	mobilization requirement stock
MSR	main supply route
NAAK	nerve agent antidote kit
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCO	noncommissioned officer
NCS	net control station
NFA	no-fire area

NGF	Naval gunfire
NLT	not later than
NUCWARN	nuclear warning
NVG	night vision goggles
OAD	operational availability data
obj	objective
OCOKA	observation and fields of fire, cover and concealment, obstacles, key terrain, and avenues of approach
Oct	October
OEG	organization and equipment guide
o/o	on order
OP	observation post
OPCON	operational control
OPORD	operation order
OPSEC	operation security
P	primary
PD	point of departure
PIR	personnel information roster
PL	phase line
PLD	probable line of deployment
PLL	prescribed load list
plt	platoon
PMCS	preventive maintenance checks and services
POL	petroleum, oils, and lubricants
PP	passage point
prep	preparatory
pri	priority
PSG	platoon sergeant
PW	prisoner of war

QSTAG	Quadripartite Standardization Agreement
rd/min	rounds per minute
recon	reconnoiter, reconnaissance
REDCON	readiness condition
RES	radiation exposure status
RF	radio frequency
RFA	restrictive fire area
RFL	restrictive fire line
RP	release point
S	supplementary
S1	Adjutant (US Army)
S2	Intelligence Officer (US Army)
S3	Operations and Training Officer (US Army)
S4	Supply Officer (US Army)
SAWS	squad automatic weapon system
sct	scout
SEAD	suppression of enemy air defenses
1SG	first sergeant
SHELREP	shelling report
SITREP	situation report
SOI	Signal Operating Instructions
SOP	standing operating procedures
SP	start point
SP4	specialist four
sqdn	squadron
SR	supply route
STANAG	Standardization Agreement
sys	system

TAC	tactical command post
TC	tank commander
TF	task force
tgt	target
TIS	thermal imaging system
tk	tank
tm	team
tns	trains
TOC	tactical operations center
TOW	tube-launced, optically-tracked, wire-guided
TRADOC	United States Army Training and Doctrine Command
TRP	target reference point
TTS	tank thermal sight
UBL	unit basic load
UMC	unit maintenance collection point
USAARMS	US Army Armor School
VEESS	vehicle engine exhaust smoke system
veh	vehicle
vic	vicinity
VT	variable time
w	with
WIA	wounded in action
WP	white phosphorous
XO	executive officer
ZSU	Soviet vehicle

REFERENCES

For current publications, changes, and supersessions, check DA Pam 25-30 or other references as indicated.

REQUIRED PUBLICATIONS

Required publications are sources that users must read to understand or comply with this publication.

FIELD MANUALS (FM)

FM 6-20	Fire Support in Combined Arms Operations
FM 7-7	The Mechanized Infantry Platoon and Squad (APC)
FM 7-7J	The Mechanized Infantry Platoon and Squad (Bradley)
FM 7-90	Tactical Employment of Mortars
FM 17-15	Tank Platoon
FM 17-95	Cavalry Operations
FM 17-98	Scout Platoon
FM 20-32	Mine/Countermine Operations
FM 21-26	Map Reading and Land Navigation
FM 34-1	Intelligence and Electronic Warfare Operations
FM 44-3	Air Defense Artillery Employment Chaparral/Vulcan/Stinger
FM 44-8	Small Unit Self-Defense Against Air Attack
FM 71-2	Tank and Mechanized Infantry Battalion Task Force
FM 90-4	Air Assault Operations
FM 90-10	Military Operations on Urbanized Terrain (MOUT)
FM 90-10-1	An Infantryman's Guide to Urban Combat
FM 90-13	River Crossing Operations
FM 100-2-1	The Soviet Army Operations and Tactics
FM 100-2-2	The Soviet Army Specialized Warfare and Rear Area Support
FM 100-5	Operations

RELATED PUBLICATIONS

Related publications are sources of additional information. They are not required in order to understand this publication.

FIELD MANUALS (FM)

FM 1-100	Combat Aviation Operations
FM 1-112	Attack Helicopter Battalion
FM 3-3	NBC Contamination Avoidance
FM 3-4	NBC Protection
FM 3-5	NBC Decontamination
FM 3-100	NBC Operations
FM 5-20	Camouflage
FM 5-25	Explosives and Demolitions
FM 5-36	Route Reconnaissance and Classification
FM 5-100	Engineer Combat Operations
FM 5-101	Mobility
FM 5-102	Countermobility
FM 5-103	Survivability
FM 6-30	Observed Fire Procedures
FM 7-70	Light Infantry Platoon/Squad
FM 17-12-1	Tank Combat Tables, M1
FM 21-10	Field Hygiene and Sanitation
FM 21-11	First Aid For Soldiers
FM 22-100	Military Leadership
FM 23-1	Bradley Fighting Vehicle Gunnery
FM 34-3	Intelligence Analysis
FM 44-1	US Army Air Defense Artillery Employment
FM 44-18-1	Stinger Team Operations
FM 71-3	Armored and Mechanized Infantry Brigade
FM 100-2-3	The Soviet Army Troops, Organization, and Equipment
FM 101-5	Staff Organization and Operations
FM 101-5-1	Operational Terms and Symbols

INTERNATIONAL AGREEMENTS

These international agreements are available on request from:

Naval Publications and Forms Center
5801 Tabor Avenue
Philadelphia, PA 19120

QUADRIPARTITE STANDARDIZATION AGREEMENTS (QSTAG)

QSTAG 506	Operations Orders, Warning Orders, and Administrative/Logistics Orders
QSTAG 567	Command and Control of Antiarmor Weapons

STANDARDIZATION AGREEMENTS (STANAG)

STANAG 2014	Operation Orders, Warning Orders, and Administrative/Logistics Orders
STANAG 2029	Method of Describing Ground Locations, Areas, and Boundaries
STANAG 2036	Land Minefield Laying, Recording, Reporting, and Marking Procedures
STANAG 2041	Operation Orders, Tables and Graphs for Road Movement
STANAG 2044	Procedures for Dealing with Prisoners of War (PW)
STANAG 2047	Emergency Alarms of Hazard or Attack (NBC and Air Attack Only)
STANAG 2082	Relief of Combat Troops
STANAG 2083	Commanders' Guide on Nuclear Radiation Exposure of Groups
STANAG 2084	Handling and Reporting of Captured Enemy Equipment and Documents
STANAG 2099	Fire Coordination in Support of Land Forces
STANAG 2104	Friendly Nuclear Strike Warning
STANAG 2129	Recognition and Identification of Forces on the Battlefield
STANAG 2144	Call for Fire Procedures
STANAG 2147	Target Numbering System (Non-nuclear)
STANAG 2868	Land Force Tactical Doctrine – ATP-35(A)
STANAG 2889	Marking of Hazardous Areas and Routes Through Them
STANAG 2963	Coordination of Field Artillery Delivered Scatterable Mines

COMMAND PUBLICATIONS

Command publications cannot be obtained through Armywide resupply channels. Determine availability by contacting the address shown. Field circulars expire three years from the date of publication, unless sooner rescinded.

FIELD CIRCULARS (FC)

FC 71-10	Movement Coordination Exercise (May 1986) Commandant, US Army Armor School, ATTN: ATSB-DOTD-PM, Fort Knox, KY 40121-5000
FC 90-13	Counterobstacle and River Crossing Operations (March 1987) Commander, US Army Combined Arms Center and Fort Leavenworth, ATTN: ATZL-SWA-DL, Fort Leavenworth, KS 66027-6900
FC 90-13-1	Combined Arms Counterobstacle Operations – The In Stride (March 1987) Commandant, US Army Engineer School, ATTN: ATZA-TD-M, Fort Belvoir, VA 22060-5291

PROJECTED PUBLICATIONS

Projected publications are sources of additional information that are scheduled for printing but are not yet available. Upon print, they will be distributed automatically via pinpoint distribution. They may not be obtained from the USA AG Publications Center until indexed in DA Pam 25-30.

MISSION TRAINING PLANS (MTP)

MTP 71-1	Tank and Mechanized Infantry Company Team

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